

MARCH 4, 1944

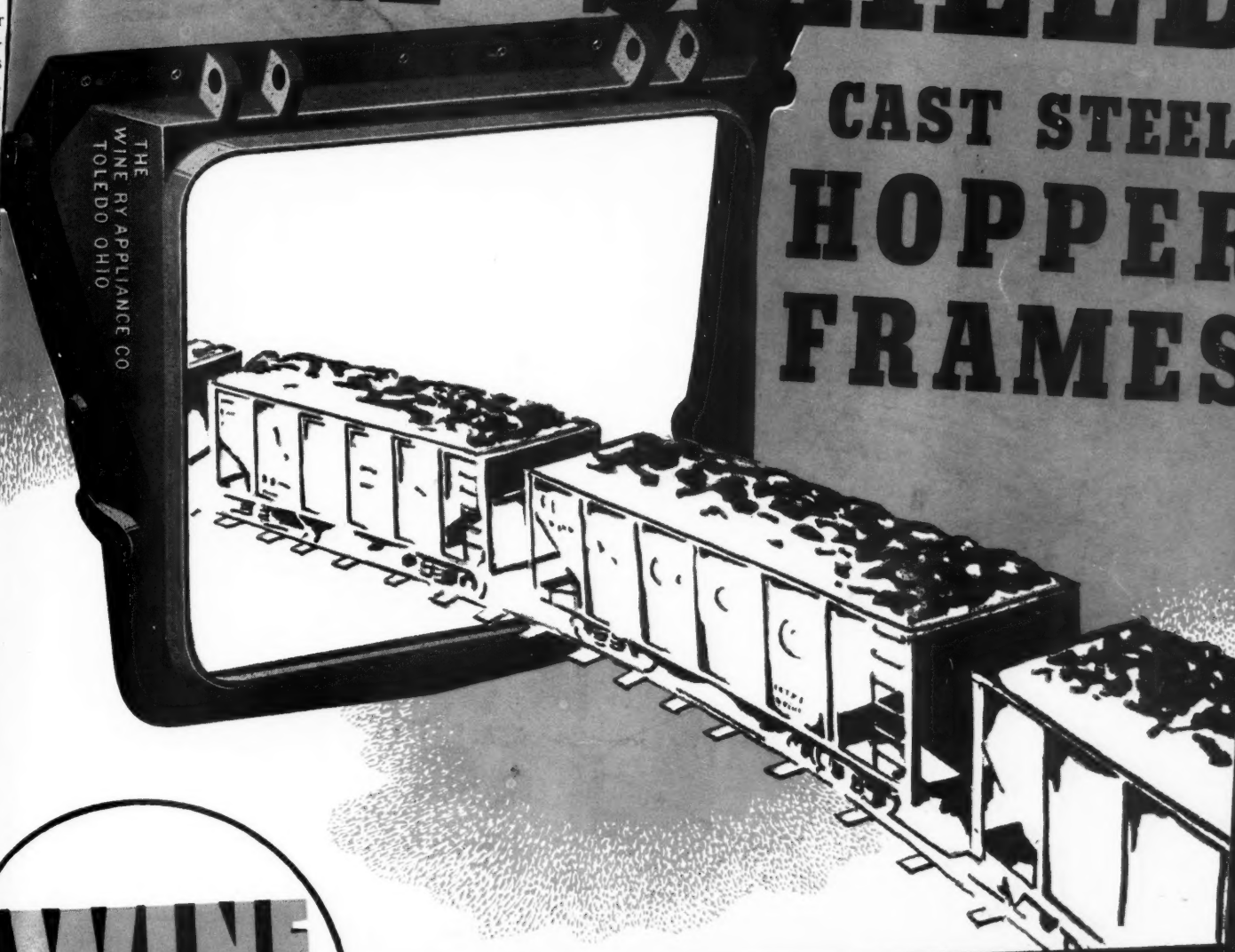
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Railway Age

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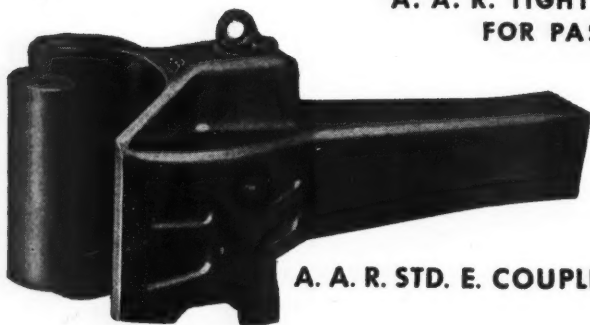
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72 days were required to restore to service the 1,570-ft. single-track bore on the Moffat line, where the blaze had cost three lives and the actual job of estimating damage had to be delayed longer than three weeks because of continued intense heat, spalling rock and persistent monoxide gas.

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An editorial review of an automotive group's plans for post-war highways on a lavish scale. Annual construction outlay would be \$3 billion a year, with city streets at federal expense, and 75 per cent of costs on federal aid projects would be by federal taxpayers.

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Observing present technological trends, C. B. Bryant, assistant to vice-president (Research and Tests), Southern, believes railroads will have large choice of materials and processes when it comes to shaping post-war activities. He looks to improvements in products now in use and sees value in wartime development of materials which will eventually be available in volume.

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The Railway Age is indexed by the Industrial Arts Index and also by the Engineering Index Service



PRINTED IN U. S. A.

Unit-type construction is an important feature of the "Union" Model 31 Electro-Pneumatic Car Retarder. Retarder units can be assembled to the length needed at each particular location in the yard. Fewer parts are employed and therefore maintenance stocks are minimized.

IN 22 YARDS ON 14 RAILROADS

"Union" Car Retarders Expedite War Traffic



"Union" Electro-Pneumatic Car Retarders are in service in 22 yards on 14 railroads in the United States. Although the majority of these installations were placed in service before the war, all of them have proved that this modern method of yard operation is indispensable to the efficient handling of the tremendously increased volume of traffic caused by wartime rail transportation.

In these retarder-equipped yards, the ability to hump *continuously* provides for full use of yard facilities 24 hours a day, regardless of weather conditions. Trains are moved promptly from receiving yards and cars are classified rapidly for departing trains.

This results in earlier deliveries of war materials and more transportation service with the existing rolling stock than would be possible without these installations of "Union" E. P. Car Retarders.



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The Week at a Glance

ANOTHER TRUMAN REPORT:

Senator Truman's committee investigating the progress of the war program includes transportation in its annual report, reviewed in our news pages. It gently reproves both government agencies and the railroads for slowness in ordering new rolling stock, while argument goes on as to whether 5-year amortization is to be permitted. An O. D. T. waybill study is revealed, the results of which will give factual evidence on the importance of alleged circuitous routing of freight. The committee believes the occupancy factor of Pullmans could be improved if the government and corporations reserving large blocks of space would release what they aren't going to use in time for other customers to pick it up.

STRANDED IN FLORIDA:

The O. D. T. has authorized the operation of two daily northbound coach trains from Florida to help get people home who drove down there and can't get the gas to drive back. The New York Times' Washington correspondent, Arthur Krock, has written a piece in which he lights into the O. D. T. for not requiring certificates of public convenience and necessity for all trips of over 500 miles—which is a favorite theme with some other editorializers. Possibly standing in queue for an hour or so at every station in order to get up to the window to convince a clerk of one's right to a travel permit might persuade these critics that the O. D. T. policy isn't so bad. There are now only a few places where long queues form—and the alternative would install them everywhere, even where there is little congestion. The O. D. T. is one of the rare government agencies which has tried to avoid shoving the people around, and its forbearance is little appreciated.

LOOKING FOR HELP: A. A. R. directors decided at a meeting last week to initiate a vigorous recruiting campaign to relieve the shortage of help, which is everywhere (but especially in spots) growing increasingly difficult. In recent weeks, an average of 40 trains daily have been delayed by a lack of crews and 70 switch engine tricks have not been worked, for the same reason. The O. D. T. has authorized the Jersey Central to pull off 68 short-haul commuter trains in order to relieve a shortage of crews which has badly delayed much essential traffic on that important terminating carrier.

WHO GETS THE BILL?: An article herein, entitled "What the Motor Folks Are Up To," is an editorial review of a detailed proposal by the "Automotive Safety Foundation" (presented to the Senate's post-war committee), calling for vastly increased "public works" on highways when the war ends—with the contribution of the heavily-laden federal taxpayers on "federal aid" projects being upped from the present 50 per cent to 75 per cent. They even want the federal treasury to pay three-quarters of the cost of improving urban streets (doing away with cross streets, so movement in congested cities will be as rapid as in the open country). Costs of highway transpor-

tation—an editorial points out—are now met in part in obedience to the capitalist ("user pays") principle, and in part are communized (i.e., paid by the whole tax-paying community). This "Safety Foundation" proposal would greatly increase the communization of transport costs.

MOST INGENIOUS PARADOX:

The astonishing part of this proposal—so closely kin to spendthrift New Dealism in its "let-Uncle Sam-do-it-at-the-taxpayers-expense" philosophy—is that Paul Hoffman sponsors it, as chairman of the "Automotive Safety Foundation." Mr. Hoffman, in all other branches of the economy with this one exception, is striving manfully to re-establish capitalist (i.e., "user pays") principles; and to minimize government participation in economic activities.

THE TRANSPORT ISSUE:

Our editorial, and our critical report of the automotive folks' presentation, point out the importance of this issue to national policy regarding transportation as a whole; and to national economic policy (whether the country is to remain capitalist or will continue its communistic drift). The war has conclusively demonstrated that the country *must* retain its railroads. These being self-supporting and privately-financed, cannot hope, whatever their efficiency, to hold their own against infinite Treasury contributions to rival agencies. If donations, bearing no ratio to receipts from tolls and fees, are made to rivals in constantly expanding magnitude—can the railroads long refrain from seeking succor from the same source (their necessity to the nation being what it is)? If all users of transportation, at length, succeed in getting a large and growing part of their service costs paid from the Treasury—will consumers of other commodities not soon demand similar partial communization of their food, clothing, and rent bills? Who can say where such a process will stop?

MOFFAT LINE TUNNEL FIRE:

The interesting story of that famous and extremely troublesome fire in Tunnel 10 on the Denver & Salt Lake last fall is related in these pages by the Rio Grande's Chief Engineer, Alfred E. Perlman, who made the site of this disaster his headquarters until the line was re-opened. Three Denver firemen were killed in fighting the fire by monoxide fumes—and the persistence of this gas and intense heat for weeks after the conflagration, plus falling rocks, slowed up the restoration job, which was hard enough without these further handicaps. As rebuilt, the tunnel will have no more timber in it.

MORE PRAISE FOR EASTMAN:

The Associated Traffic Clubs met in Cleveland last week (the session being reported herein). Mr. Eastman was to have been the guest of honor, but illness prevented him. Nonetheless, Director Joe and the O. D. T. were the recipients of the high honors—W. M. Jeffers being the spokesman for the railways and John Keeler for the shippers, General Young responding for the O. D. T.

HIGHER TAX ON FARES: On April fool's day, the fare-paying passengers who now are assessed a federal tax of 10 per cent for their train riding, will begin to pay 15 per cent instead. The excess profits tax will rise from 90 per cent to 95 per cent; and the railroads will continue to pay taxes on undermaintenance, which the Treasury classes as profits. This is the tax bill enacted by Congress over the President's veto—which he excused by accusing the measure of favoring the greedy rather than the needy. The measure is reviewed in our news pages.

WHAT NEW MATERIALS?:

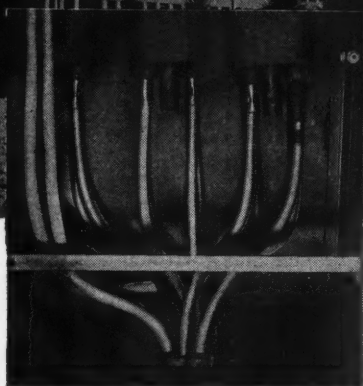
What are the prospects for new materials—and novel applications of old ones—which are now being developed for improved railroad performance? This is one of the liveliest of present questions for interesting and profitable speculation and inquiry, and it is painstakingly examined in an article herein by C. B. Bryant, assistant to vice-president of the Southern. The discussion runs the gamut, from protective coatings, through decelerated corrosion and wear, weight reduction and better bearings, improved motive power and application of electronics.

LABOR-SAVING NOSTRUMS:

There are a lot of patent medicines being peddled as a part of the federal manpower officials' efforts to provide *ersatz* working forces for industry and transportation, replacing the skilled help departed for the wars. Like many patent medicines, if the patient happens to have the specific distempers for which the formulas are concocted, they often work well enough; but such magic elixirs usually only kid the sufferer when his malady is of a kind which requires an individualized prescription. This, the leading editorial in this issue asserts, may be one of the reasons why the manpower situation on the railroads has drifted into so serious a state. By politely imbibing some of the federal consumption cures and sure-fire gland tonics—applicable to the relief of labor pains in manufacturing but not on the railroads—may not the railroads, perhaps, have encouraged the federal bureaucracy in the belief that the railroads have no labor shortage that a few more girls in overalls couldn't cure for them?

WHERE 10x0.1 ISN'T 1:

One such much-publicized cure-all for a shortage of highly-skilled labor in manufacturing is to take a complex craft and break it up into a dozen or more segments, each of which a learner can master in a few weeks' time. This device, it is said, really works in some industry—and gives a plant a production from "quickie"-trained rookies which heretofore, without such high specialization, required journeymen of long training to accomplish. But ten "telegraphers," each knowing only one-tenth of the Morse code, cannot handle messages or train orders; and ten trainmen, each knowing one-tenth of a division, cannot operate trains. Hiring girls and the super-annuated and training programs have undoubtedly given the railroads some much-needed semi-skilled labor; but not the indispensable craftsmen.



Low side of 4150-volt distribution transformer, showing connections of one of the three 208-volt ring mains in the Bell Telephone Laboratory cellar. The 4/0 Okolite-Okoprene cables are connected to the crab joint with mechanical squeeze connectors.

ENGINEERED TO LAST FOR 99 YEARS

When Bell Telephone Laboratories decided to decentralize part of their engineering facilities by moving into the country, they determined that their new buildings would be built to last "for at least 99 years."

Taking advantage of their own extensive laboratory experience and test results, they wrote specifications that they knew would provide the most durable materials and equipment available.

Their wiring specifications, for instance, called for an oil-base compound protected with a neoprene sheath, where exposures required it. In this new laboratory it was essential

to have insulated wire that would resist flame, moisture, heat and chemicals.

The accompanying illustrations show how Okolite-Okoprene cables fitted into the picture and how simple it was to install and splice this carefully-chosen wiring. Okolite-Okoprene cables are used in many other places — in central stations, on railroads, in industrial plants, mines, or wherever long-life and full protection is required — and they cost no more than high quality braided wire. Bulletin OK-2009 describes them in detail... The Okonite Company, Passaic, N. J.



3' x 5' Distribution manhole in Bell Telephone Laboratory cellar where splicer is making final tap with special split tee-connector. Okolite-Okoprene cables were specified for use in the following tough, damp locations: (1) under cellar floors, (2) between buildings, (3) to street lighting standards, (4) at substation, (5) all wiring in kitchen refrigerators, (6) all wiring to outdoor bracket fixtures.

Cooperating on this project were:

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Voorhees, Walker, Foley & Smith, New York

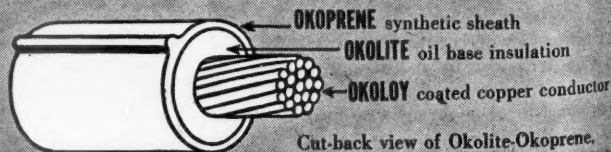
Electrical Contractor:

Hatzel & Buehler, Inc., New York City

Distribution and Power Cables:

The Okonite Company, Passaic, New Jersey

OKONITE INSULATED WIRES & CABLES 



RAILWAY AGE

Manpower Shortage Menaces Transportation

The make-shifts the government has tendered to the railroads in lieu of leaving them an adequate force of competent men to move their trains and keep their equipment and track in serviceable condition have all played out. "Replacement schedules," "training programs," "hiring women," and other such expedients have done all they can ever hope to do in providing labor for the maintenance of necessary railroad service. Government Manpower and Selective Service officials have now got to cease taking irreplaceable employees away from the railroads, or accept sole responsibility for the deterioration in railroad service which is developing day by day.

There is hardly a large railroad which does not have to report each day its delay in moving some cars—and occasionally even thousands—because it does not have trainmen, enginemen or yardmen equal to its traffic demands. Car shortages—as yet fortunately not large or general—are occurring, not because of an insufficient supply of cars, but because of lack of employees to move them. Telegraph offices by the hundreds, needed to keep trains moving—instead of standing around on sidings waiting for instructions—have been closed because there are not enough competent operators to man them; and Selective Service officials are granting only three or four months' deferments for such skilled employees.

Possibly, the Manpower and Selective Service officials do not appreciate that the device, so successful in industry, of breaking down a difficult craftsman's job into simple components which an unskilled girl can master in a few weeks, will not work on the railroads. You can't break down the art of telegraphy and the book of operating rules into 10 parts and have 10 learners each master one-tenth of them; and then have 10 "specialized" railroaders. You can't have trainmen who are thoroughly familiar with one-tenth of a division, and make effective use of them in running a railroad.

By going along with these popular and well-advertised manpower-conserving formulas—which are serviceable enough in mass-production industries where all operations are under one roof—the railroads have, not unlikely, helped to create an unwarranted complacency on the part of the Manpower authorities. The fact is, however, as every railroad man knows, that such devices cannot now, and never could, hope to meet the fundamental manpower problem of the railroads. They could provide, and have, some fairly competent junior employees, but they do not help at all in providing the type of personnel which is the true characteristic of the railroad industry.

It can, therefore, be stated categorically that there will be a serious breakdown in railroad transportation—and at no far-distant date—if the Selective Service authorities persist in their present policy of drafting experienced railway labor. "Training programs," "replacement schedules," "hiring women" and other such nostrums—however effective they may be in the manufacturing industry—are a delusive patent medicine when applied to skilled railway personnel.

It is misplaced patriotism to maintain a deferential silence about these facts. A breakdown in railroad transportation because of inept governmental dealing with railroad manpower would hurt the war effort more than any action within the capacity of the enemy.



Should Transport Costs Be Further Communized?

Chairman Pogue of the Civil Aeronautics Board made a speech to North Atlantic State highway officials on February 17th in which he said that "just as the automobile was never able really to come into its own until good roads had been built . . . so will the widespread use of the conventional type airplane depend upon landing areas."

No argument about that. The question is: *Who is going to build these landing areas and pay for them*—the users or the general taxpayers? And are these landing areas going to be subject to an *ad valorem* tax such as is imposed upon other property in economic use or are they, like court-houses and jails, to be free of such taxation? These landing fields are business property, whether they be in private or public ownership. Are they to be treated differently from other business property, either in being tax-built or tax-exempt; and if so, why the distinction?

In the way this question is answered—not only as regards aviation but also as this same issue arises in other segments of the economy—will be determined whether free competitive enterprise, or the socialism of a "planned economy," is to be the future dominant characteristic of this country's economic life. This issue has been brought to a critical stage as regards highway transportation by the statement, entitled "The Role of the Federal Government in Highway Development," prepared by the "Automotive Safety Foundation" for the Senate Committee on Post-War Planning, and reviewed in an editorial article elsewhere in these pages.

In brief, the proposal of this representative body of automotive manufacturers (in which they are supported by many other groups interested in highway transportation) is that road construction be expanded to an unprecedented magnitude in the post-war period; that on "federal aid" projects the contribution of federal taxpayers be raised from 50 per cent to 75 per cent of the total outlay; and that federal money be used for a vast program of reconstructing city streets to eliminate cross traffic.

The essential difference between a "planned" and a "free enterprise" economy lies in the manner in which productive forces are directed and distributed. In a free economy, the direction comes as the resultant of the uncoerced actions of individual citizens. Each purchases what he chooses; gets what he pays for and pays for what he gets, and only that; and investment is guided by customers' preferences. In a "planned economy" the individual consumer is offered plenty of things he doesn't want and a shortage of what he prefers. Asking for a fish, he is given a serpent; for bread, he is given a stone. He has no choice in investing his savings; instead, he pays them to the tax collector, and they are expended as directed by the "planners." Our economic surroundings thus pass from control by the

spontaneous preferences of consumers and become the plaything of bureaucrats, who know better than the people themselves what is good for them.

Our highways have been financed by means both of "planning" and by the method of economic freedom. To the extent that capital and maintenance expenditures on highways are made to depend upon the sums collected in tolls, or in gasoline or license fees levied on those who use the highways but not on those who do not, highway development has been consistent with the concept of a free economy. The "planned economy" method prevails to the extent that highway funds are appropriated regardless of the revenues from tolls and fees specifically derived from the use of the highways. The larger the proportion of "federal aid" and general taxes to total highway expenditures, the further we depart from a free, customer-controlled economy and the further we enter a regimented, "planned," socialist society.

It has been demonstrated by the present war that the nation cannot get along—militarily or economically—with a railway system of any less efficiency or magnitude than that now available. It is obvious that such a system cannot be sustained in peacetime with reliance entirely on private investment, if there be practically limitless expenditure of general tax funds in the expansion and improvement of competing agencies of transportation. That is, if these other agencies are to be developed far beyond the willingness of actual users to pay for what is provided, then the competition of such facilities will at length force the railroads, however reluctantly, to resort also to this means of support, in order to preserve the efficiency and adequacy of their service. If that happens, the competitive advantage enjoyed by the agencies of transport now benefited from general taxation, will vanish; while the proportion of the total economy captured by the political "planners" will have greatly increased. If transportation should be predominantly provided, not under the capitalist doctrine of "user pays," but under the communist principle "from each according to his means, to each according to his need"—then consuming interests will have a strong precedent and suggestion similarly to shift the cost of other economic goods to the federal treasury. By logical process, the whole economy would be communized.

Foresight should suggest to advocates of highway, waterway, and airline expansion that, as they cherish the continuance of private enterprise in their own businesses, they insist upon close relationship between expenditures on all varieties of transportation facilities and specific contributions toward costs by users of these facilities. Congress, moreover, should realize that it cannot decide where the public interest lies in proposals for large expenditures of federal funds in the development of newer forms of transportation, if it considers these facilities singly. It must also concurrently weigh what difficulties it may be thereby interposing to the maintenance of a railroad system adequate to the needs of commerce and the national defense.

Will Dynamic Balancing Help Make Smoother Rides?

The anniversary, this year, of the introduction of streamlined high-speed trains, is an appropriate time to contemplate the fact that practically all major developments which lead to progress in an industry such as railroading bring with them major problems. It did not take the mechanical department personnel, and manufacturers as well, long to realize that high-speed operation introduced evidence pointing strongly to the need for the accurate balancing of wheels in high-speed trucks, whether in locomotive or in cars.

Industries other than the railroads have long been familiar with the value of balancing rotating parts dynamically and when this wheel problem appeared in railroad trucks it was but natural to turn to the possibilities of the dynamic balancing of car wheels. There are several balancing machines available that are suitable for handling railway truck wheel sets. Those roads having electric traction equipment, or electric repair shops which handle armature repairs for large size motors, are familiar with the equipment and technique involved. It is reasonable to assume, however, that insofar as mechanical department men are concerned the question of dynamic balancing is one with which they are not too familiar. Because of the need for wheel balancing and their interest in finding a way to do it, there are, at the moment, several important questions that should be answered for their benefit.

Several mechanical department people have raised the question as to what will be the effect of operating conditions such as slid-flat wheels and brake shoe wear on wheel sets that have been accurately machined and dynamically balanced.

Some light on this general problem may be found in a paper prepared by K. F. Nystrom of the Milwaukee* for inclusion in the 1943 Yearbook of the Car Department Officers' Association, in which he deals with the question of wheels for high-speed service and includes the statement that "It is an important requirement that wheels under high-speed equipment be kept concentric within .010 in. Their treads must be smooth and fairly close to the original taper. This does not mean that a wheel has to be the original 1 and 20 taper or that it cannot be run with considerable wear but it does mean that the tread must not be allowed to develop local sharp tapers. The biggest factor in producing wheel shimmy is what the car department men class as a second flange—a short sharp taper close to the throat of the main flange."

There is hardly anyone familiar with railroad trucks and their operation who might not be willing to concede that to have wheel sets in dynamic balance is most desirable. It is also apparent, as evidenced by Mr. Nystrom's statement, that a very slight amount of wear will set up undesirable conditions such as shimmying

in a car wheel at high speed. Here is evidence of the fact that wear produces an unbalanced condition.

Tests are being made to determine the value of this type of balancing and in the interests of making available the technical data which so many are awaiting with interest, it seems worth while for the railroads and the manufacturers to work together in an effort to find out how dynamic balancing may contribute to the development of better riding railway trucks, and to just what extent wheel wear acts as a negative factor.

Prospects for Building Work

In light of the large amount of essential building improvement work that has been dammed up on the railways behind War Production Board orders restricting such work, any relief is welcome news to railway building officers, and some relief is definitely in sight. This does not come through any modification of Order L-41, which still restricts to \$1,000 expenditures for new materials for individual building construction and improvement projects permitted or authorized under the order. Furthermore, there is little relief for the building engineer in the recently amended order P-142, which, within the limitations of that order, now allows the undertaking of individual projects employing materials acquired under priority ratings costing up to \$2,500, even though the amendment does greatly simplify the paper work involved in securing the approval of projects of this scope.

The real relief comes in the easing of the building material situation generally, with the principal exception of lumber, and the unannounced, yet current policy of the Construction Rating section of the Priorities' division of the War Production Board to look more favorably upon all requests by the railways for building construction which is necessary for the successful prosecution of the war in the transportation field. The fact that this policy is in effect is evidenced both by the types of projects that are being authorized today and by the speed with which such authorizations are being secured. While many building materials are still tight and govern the approval or rejection of applications, the primary controlling factors appear to be more largely the essentiality of the projects to the adequacy of war-time transportation, and the labor factor involved, rather than the quantities of materials required, unless these materials are of a very critical nature.

In the light of such developments, it behooves railway building officers to review their building requirements carefully, giving first consideration to essentiality, and second, to the amount of labor involved. This applies regardless of the size of the project, and leads to the further suggestion that the most extensive use of power machines and tools in carrying out any type of construction may mean, through the saving in man-hours involved, the difference between approval and rejection by the W. P. B.

* An abstract of this paper appeared in the *Railway Age* for February 26, 1944, page 423.

Fire in Long, Timber-Lined Tunnel

Presented Tough Problems*



Fire Fighting Was Done Under Serious Difficulties

AT 11:10 a. m. on September 20, 1943, the engineer on the Denver & Salt Lake's westbound passenger train No. 1, arriving at Crescent, Colo., about three miles west of Tunnel 10 on the road's Moffat Tunnel line, reported that he had smelled wood smoke when coming through this tunnel a few minutes previously. Immediately upon receiving this report, the bridge and building supervisor and a bridge gang working nearby proceeded to the tunnel. A Denver & Rio Grande engine, returning light to Denver, Colo., after having helped a freight train from Denver to the Moffat tunnel, was also dispatched to the scene. They arrived at the west portal of Tunnel 10 at 11:50 a. m., at which time the flames were pouring out of the tunnel to such an extent that it was impossible to approach closer than 200 ft. to the portal.

Alternate Sections Timber Lined

Tunnel 10, a single-track bore, is located 27.42 miles west of Denver on the line of the Denver & Salt Lake which runs from Denver to Craig, Colo. The line is also used between Denver and Orestod, Colo. by the Denver & Rio Grande Western's through traffic between Denver and Salt Lake City, Utah. The terrain in this vicinity is such that an open cut or shoo-fly was not found to be feasible when building the line.

The tunnel was 1,570 ft. in length (now 1,560 ft. as 10 ft. at the west portal collapsed), all on tangent

* Abstract of an address presented before a joint meeting of the Utah Post of the American Society of Military Engineers and the Utah Section of the American Society of Civil Engineers, at Salt Lake City, Utah, February 3.

Restoration of 1570-ft. single-track bore on Moffat line, involving the removal of a large volume of cave-in rock, required 72 days and cost the lives of 3 men

By A. E. Perlman

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except 110 ft. at the west end, which is on a very light spiral. The grade through the tunnel is 2 per cent ascending westward. From east to west through the tunnel, there were, in order, 198 ft. of timber lining, 108 ft. unlined, 201 ft. of timber lining, 103 ft. unlined, 41 ft. of timber lining, 28 ft. unlined, 502 ft. of timber lining, 147 ft. unlined, 45 ft. of timber lining, 53 ft. unlined, and 142 ft. of timber lining. The fire apparently started in the most westerly timber section.

To fight the fire, a locomotive with a number of water cars and fire hose, was immediately called out of Utah Junction, Colo., to proceed to the tunnel. Water was used in fighting the fire, since both the Denver Fire Department and General Loucks of the U. S. Chemical Warfare Service advised that water would be the only effective means of extinguishing the flames.

Three Firemen Lost Lives

The wind was blowing strongly from the east to the west and it was possible to enter the tunnel from the east end for a distance of more than 850 ft. with the fire hose and play water upon the timber. However, it was not possible to get close enough to the burning section to cut through the lagging in order to play water upon the packing, which was more than 40 years old and burned with the intensity of a gasoline fire. At times the wind would shift, driving the fire fighters out of the tunnel. Although it was impossible to approach close to the west portal a curtain was placed over the east portal to retard combustion.

Late in the evening of the day the fire was discovered, the Denver Fire Department sent a pumper and four firemen, equipped with mine safety appliance all-purpose respirators, to the scene of the fire, where they assisted in pumping water through the city fire hose on the timbers. These men removed the curtain over the east portal in order to obtain better working conditions for fighting the fire. After three of the firemen had been inside the tunnel for a few minutes, one of them was

forced to come out because his respirator was leaking. After the other two men had been inside for about an hour and the wind had changed direction so that smoke was billowing out of the east portal, one of the remaining firemen started in to see if the two men holding the hose nozzles inside the tunnel were all right. A short time later, G. E. Hamilton, roadmaster on the road, put on a respirator and also started into the tunnel. About 100 ft. in from the portal he stumbled over the body of the last fireman to enter the tunnel and started to carry him out. However, when he was within a short distance of the portal, he collapsed. Fortunately, he was seen by the men outside the tunnel who ran in and brought both men out.

The fire rescue squad from Denver was summoned immediately and worked over the fireman for two hours but was unable to revive him. The intense fire had generated a deadly amount of carbon-monoxide gas, against which the respirators used were ineffective. The bodies of the other two firemen were not recovered until two months later, and then at a point near the center of the caved-in section of the tunnel. They had not been trapped by the cave-in but had been overcome by carbon-monoxide.

The following day, when the fire reached the next to last timber section at the east end, the entire roof of the tunnel in this section collapsed, filling 300 ft. of the tunnel with huge granite boulders. The 198-ft. section beginning at the east portal was the only timber section which was not completely destroyed. Westward from the caved-in section, the floor of the tunnel was covered with debris ranging from 6 to 20 ft. in depth, which had fallen from the roof and sides of the tunnel when the timber supports burned out.

The problem of reconstruction was complicated, first, by the continued presence of the deadly carbon-monoxide

gas, which is fatal in concentrations of as little as 0.025 per cent; second, by the intense heat in the tunnel, which, during the fire, melted solid rock in some places, and which as late as November 2, 43 days after the start of the fire, was at times so intense that the work had to be stopped temporarily; and thirdly the danger from falling rock, which spalled off the roof and sides of the tunnel as the rock cooled.

Heat Delayed Accurate Estimate of Damage

The day after the fire, John Austin, superintendent of the Stiers Brothers Construction Company of St. Louis, Mo., who was engaged in driving the Big Thompson Tunnel near Granby, Colo., agreed, after having received permission from the Bureau of Reclamation, to shut down this work and move his crew and equipment to Tunnel 10 to assist in opening the line. A survey of the extent of the damage could not be made for more than three weeks after the start of the fire. It was possible to approach the east end of the caved-in section immediately, but due to the intense heat and the spalling rock encountered in the more than 1100 ft. from the west portal to the caved-in section, it was impossible to make accurate estimates of the damage for some time.

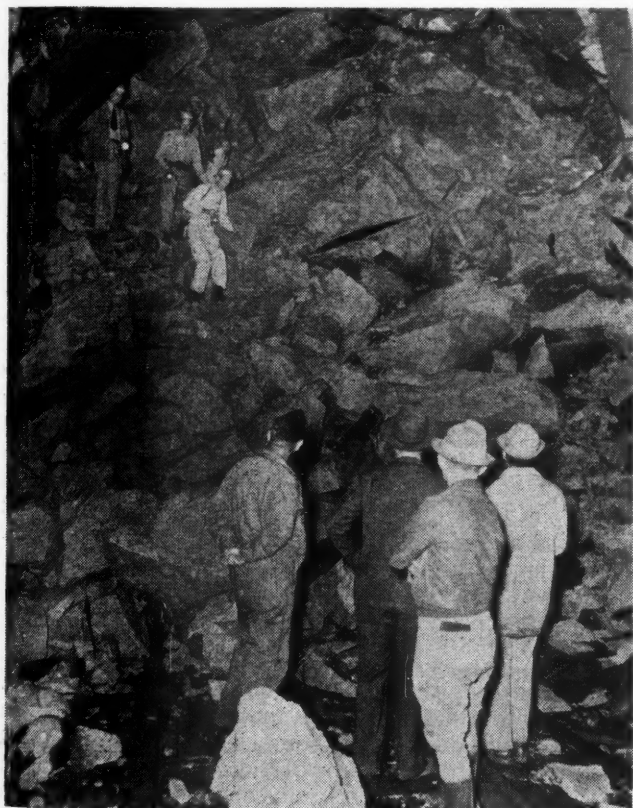
The caved-in portion began 306 ft. from the east portal. When the roof of the tunnel collapsed in this section, huge blocks of granite came down, completely filling the bore. While it could not be determined accurately how far above the roof of the tunnel this broken rock was to be found, it was thought that this condition existed for a distance of 60 to more than 100 ft. above the roof, based on calculations of the amount of swell in the broken material. Not knowing the length of the caved-in portion at first, and believing that any attempt to clean out the entire mass of broken rock might create a chimney to the top face of the mountain—which in this case would bring down considerable slide rock which lay above the tunnel—it was decided to tunnel through the caved-in portion and to hold in place the broken rock above the roof of the tunnel by supporting timbers. Accordingly, a pioneer bore was begun through the top of the muck pile, allowing sufficient head room to permit the placing of 39-ft. lengths of 100-lb. rails longitudinally under the 8-in. by 8-in. timbers holding the spiling.

These rails were then supported to the top segments of the 12-in. by 12-in. timber sets which were used to support the ground in the standard tunnel section.

Carbon-Monoxide a Constant Problem

Driving the pioneer bore was particularly hazardous because of the weight of the loose material above the cave-in, necessitating careful bracing against any further movement; the heat, which as late as November 2 made it impossible for the men to work in the small opening until the wind was favorable and assisted the two ventilating fans in cooling the air; and the carbon-monoxide gas, which was a constant threat to the men working in the tunnel. This odorless, tasteless gas would seep out from between the voids in the broken rock whenever the barometer fell, causing a great number of lost man-hours in the work.

On November 29, twelve men working in the heading, including A. J. Neff, supervisor of work equipment, were affected seriously by the gas, four of them collapsing completely. When this happened, they were removed from the tunnel immediately and were placed in a bunk car which was rushed to Denver by a Diesel-electric



Tons of Rock Blocked the Tunnel Completely Throughout the 300-Ft. Cave-In Section

tric switch engine, where they were placed in oxygen tents. During the trip to Denver, oxygen was fed to them from tanks which had been on hand for welding work, and we were told by physicians that this was undoubtedly responsible for saving the lives of several of those most affected.

Constant vigilance was necessary to protect the men against this gas until after November 3, when the pioneer bore was holed through. The barometer was watched constantly. Experts from the Bureau of Mines supplied us with hoolamite detectors, which indicated when the concentration of gas was too high. Much time was lost on this account, as on many occasions the men were driven from the tunnel for several hours by the presence of carbon-monoxide.

Muckers Clear Cave-In

To take charge of the work at the east end, Paul Guinn of Draper, Utah, an expert at working through bad ground in tunnel construction, was flown to the scene. One No. 60 electric Conway mucker was shipped from Salt Lake City, Utah, and another from Boise, Idaho. A 112-kv.a. Diesel generator unit was obtained from Denver to furnish power for the Conway muckers and for the other power tools used in the east end. One No. 10 and one No. 9 blower were installed outside the tunnel at the east portal to furnish fresh air to the men working inside. A D-2 and a D-6 Caterpillar tractor were used to spread the material removed from the tunnel.

This material was brought out in 5-yd. mine dump cars by a 380-hp. Diesel-electric switch engine secured from the Denver yards of the Rio Grande. Since the Conway muckers and the mine cars were built to 3-ft. gage, it was necessary to install a third rail for this operation.

The mucking at the west end was handled by Sargeant Overshot loaders and 7-yd. capacity Dumpsters. It was necessary to keep three of the Overshots available to insure having one in operating condition at all times, as the conditions under which they were operated were extremely unfavorable. While one of these machines was mucking, a second one was being repaired, using parts borrowed as necessary from the third machine. Two mechanics were employed on each eight-hour shift to keep the equipment in condition.

A 75-kv.a. Diesel generator was set up to supply power for one No. 10 and one No. 9 blower installed at the west end of the tunnel, and also for power saws, lights and miscellaneous tools at this end.

Loose Rock Scaled by Hand

Ahead of the mucking machine, loose rock was scaled by hand and a coat of gunite was put over the remaining face in an attempt to reduce as much as possible the danger from spalling rock, which occurred as the rock cooled down. The burning of the large quantities of packing behind the timber sets in the supported sections had generated heat sufficient to form molten rock in many places. In the granite, the expansion of the mica due to the heat left lines of cleavage as the rock cooled so that it was necessary to clear this rock, which lay from 6 to 20 ft. deep inside the tunnel. By using the Overshot loaders and Dumpsters, it was not necessary to build rail into the tunnel from the west end, and the floor could be cleaned to subgrade with a $\frac{3}{8}$ -yd. Bucyrus-Erie shovel.

The caved-in portion of the tunnel, the center of

which was 1,117 ft. from the west portal, was reached from the west end on October 25. Then a pioneer bore was started in this end to connect with the one being driven from the east end.

Concrete Lining

A portable 10-ft. steel form, which had been used in lining the $\frac{6}{4}$ -mile Moffat tunnel, was brought down from that tunnel, and later two similar 10-ft. sections were added. These forms were set up a short distance inside the west portal as soon as clearing operations permitted, and the placing of reinforced concrete lining was begun, using three Pumpcrete machines and two large concrete mixers. Meanwhile, a steel tunnel support was designed, employing 10-in. I-beams welded together in segments and formed in two pieces so they could be bolted together at the center. As the work progressed, these were erected on three to five feet centers as the nature of the ground required. The space between the steel sets and the sides and roof of the tunnel was then packed with timber to provide support for any rock in which blocky material or mud seams were encountered, or where the rock was not arched properly to give suitable support. A total of six carloads of this packing, largely 4-in. by 4-in. and 4-in. by 6-in. material, were required in the 343 ft. of tunnel in which the steel sets were placed.

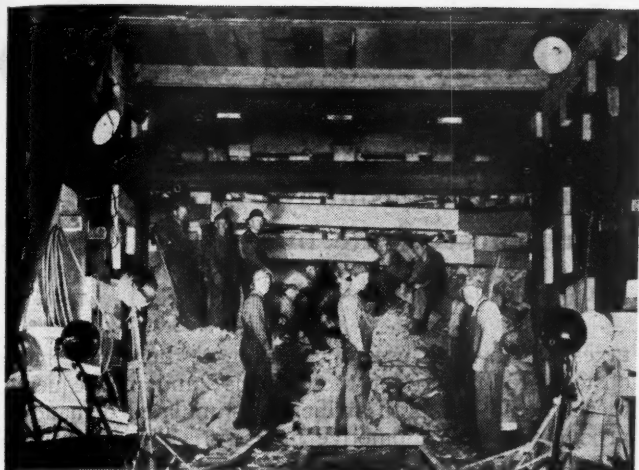
Owing to the length of time required to open up the caved-in section, it was possible to encase these steel supports in concrete before the caved-in portion was cleared. In this, a full four-inch covering was provided over the front face of the I-beams, employing sectional wood forms. This was done by the Olson Construction Company. In all, 596 ft. of the tunnel was lined with concrete before the caved-in portion could be cleared for traffic.

The pioneer heading was holed through at 1:45 p. m. on November 3. This was helpful in a number of ways. It permitted a good draft through the entire tunnel, which put an end to our difficulties with carbon-monoxide gas and assisted materially in cooling the tunnel which, up to this time, had remained extremely hot.

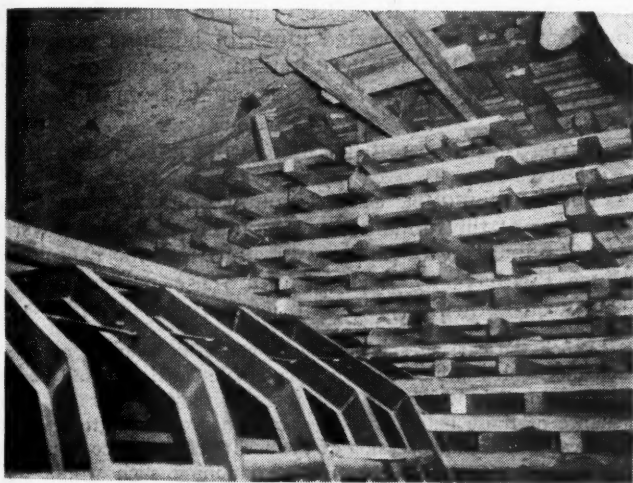
With the pioneer bore holed through, it was also possible to eliminate the use of the long and difficult trail around the mountain to get men and materials from one end of the tunnel to the other, which greatly expedited the work. The operation of enlarging the opening through the big cave-in to standard size was then begun from both ends, and breast boards were brought down on each side at 4-ft. intervals, averaging approximately 40 hours for the operation, thus giving the equivalent progress of 8 ft. through the cave-in each 40 hours. Very large boulders were encountered through the east portion of the caved-in section, but on the west end fine material, which caused many runs, slowed up the work. Supporting timbers, 12 in. by 12 in., with a five-segment arch, were placed solidly together through the caved-in section.

Consolidate Broken Rock Above Arch

We had no way of determining how far above the roof or into the sides of the tunnel the rock had been broken, and there was some doubt regarding the adequacy of the 12-in. by 12-in. timbers to support the side pressures in the vicinity of the spring line when traffic was resumed through the tunnel. This concern was due largely to the considerable vibration that is set up by the unbalanced forces acting upon the three 1,000-



Within the Caved-In Section, Showing the Shoring, Staging and General Timber Work Necessary in Clearing the Tunnel



Cribbing Installed in One of the Large Holes Above the Normal Tunnel Arch. Note New Steel Framework in Place Prior to Concreting

000-lb. locomotives which are used to haul heavy trains through this tunnel. It was decided, therefore, to consolidate the broken rock to a height of approximately 12 ft. above the arch of the tunnel by low-pressure grouting. However, with this transcontinental route blocked for two and a half months, it was decided to attempt to run trains before this grouting had been carried out. At the present time this work has been completed and, with the broken rock consolidated sufficiently to permit the removal of the timber sets, they are being replaced with a concrete lining. Later, it is also planned to replace the unburned 198-ft. timber section at the east end with concrete lining.

Necessitated Diversion of All Traffic

During the time the tunnel was blocked, all Rio Grande traffic had to be diverted over the Royal Gorge route via Pueblo and Tennessee pass, a route which is 175 miles longer and which includes a maximum gradient of 3 per cent on the west side of Tennessee pass. Part of the traffic was diverted to other transcontinental railroads which, during the October peak, had very nearly reached their own capacity. Thus, it was necessary for us to exert every effort to complete the tunnel work at the earliest possible date. The Denver & Salt Lake maintained passenger, mail and express traffic by running their Trains 1 and 2 between Craig, Colo., the

western terminus of the road, 231 miles west of Denver, and Rollinsville, Colo., 14 miles west of Tunnel 10, and by operating busses and trucks from that point to Denver. Also, during this period, more than 100,000 head of sheep from points on the Denver & Salt Lake were moved to market in this same manner.

Work Carefully Programmed

To expedite the tunnel repair work, three eight-hour shifts were employed in all operations. Since many varied operations had to be carried on simultaneously, it was necessary to co-ordinate them in such manner as to avoid their conflicting with one another. The various operations, therefore, were programmed carefully, each daily program showing the various items of work to be performed and indicating in each case under whose supervision it was to be carried on.

It was necessary to give the transportation departments of the two railroads a definite date for opening the tunnel well in advance so that men who had been transferred to the over-taxed Gorge route, and others who had been furloughed, could be recalled to their regular territories, and so that the motive power could be properly re-assigned. We announced December 1 as the day, based upon the rate of progress we were making through the big cave-in, but as that day approached we began to think we had been over-optimistic. However, everyone on the job made his greatest effort to meet the date set, and at 4:53 p.m. on December 1, D. & S. L. train No. 1—which had been the last train through the tunnel on September 20—entered the east portal of the tunnel and cleared the west portal at 5:07 p.m. Full service was put in effect the following day.

The Olson Construction Company's crew is still on the job, finishing up the concrete work after grouting behind the timber sets through the big cave-in. This, of course, is slow work under traffic. In this latter work, the timbers are being removed and the concrete lining is being put in place, which will restore the tunnel to standard clearance.

As finally reconstructed, the tunnel will be entirely fireproof. From east to west it will have 198 ft. of concrete-encased steel sets, 50 ft. of rock section, 170 ft. of concrete-encased steel sets, 30 ft. of gunite facing, 153 ft. of concrete-encased steel sets, 217 ft. of concrete lining, 234 ft. of gunite facing, 56 ft. of concrete, and 68 ft. of gunite.

Whole-Hearted Co-operation Speeded Work

If it had not been for the whole-hearted co-operation of everyone on the job, the task would have taken much longer than it did. Assisting me in general supervision of the work was F. K. Calkins, division engineer of the D. & S. L. The purchasing agent of the D. & S. L., C. E. Kelsey, worked indefatigably in keeping us supplied with the large and varied quantities of materials necessary to prosecute the work. Roadmaster G. E. Hamilton and his assistant, E. R. Moran, supervised the railroad forces directly in alternate 12-hour shifts, and Master Carpenter E. T. Ritchie, borrowed from the Rio Grande, directed the bridge and building forces working in the tunnel. A. J. Neff, supervisor of work equipment, handled the problems related to work equipment and operators.

In view of the dangerous conditions encountered in the work, we were extremely fortunate in the matter of injuries. In only one case was a man hit by falling rock and injuries were not serious. However, there were many narrow escapes.

What the Motor Folks Are Up To

An editorial review of a proposal by automotive interests for a vast increase in highway outlays with federal taxpayers footing most of the bill

THE automotive industry, speaking through the so-called "Automotive Safety Foundation," is holding out the tin cup to the federal Treasury for a billion dollars a year for post-war highway construction. It hopes that state and local governments will provide additional funds so that annual outlays for highway construction may reach \$3 billions per annum. The chairman of the "Automotive Safety Foundation" is Paul G. Hoffman, president of the Studebaker Corporation, who is also chairman of the Committee for Economic Development. In this latter capacity, he is carrying on an effective campaign for maximizing post-war production and employment in *private* industry. When it comes to the expenditure of public funds in a manner to stimulate his own branch of industry, however, his preference for self-supporting enterprise over that carried on by general tax funds appears to suffer considerable diminution.

The views and hopes of the automotive industry for the post-war advancement of their business—not from the willing *quid pro quo* of customers, but from the stimulus looked for from enforced exactions from war-burdened federal taxpayers—are set forth in a document entitled "The Role of the Federal Government in Highway Development," "printed for the use of the Special [Senate] Committee on Post-War Economic Policy and Planning" by the Government Printing Office.

The line of argument of this presentation may be summarized as follows: (1) highway [automotive] transportation affords great benefits to the American people; (2) highway development never did go along as rapidly as the automotive manufacturers would have liked, and it has been decelerated by the war; (3) therefore, such development should be greatly increased following the war, primarily at the expense [75 per cent of costs of "federal aid" projects] of the Treasury, rather than at that of local governments or the users of the highways.

City Streets at Federal Expense

The document provides a convenient survey of highway outlays and federal contributions thereto in previous years. Therein it appears that federal expenditures for highways in the years 1921-40 represented less than 17 per cent of the total of \$39 billions so expended—and that federal contributions have heretofore been limited largely to rural roads and to 50 per cent of the cost thereof. Now, however, it is proposed that the federal Treasury's share of total construction costs be increased to 75 per cent, and that such aid be extended to cover city streets—not just main highway routes through the cities, either.

The underlying purpose of the proposal appears to be to separate even further than at present the payment of the costs of super-duper highways from identification with use of these highways. The motor vehicle operator might not feel that he could "afford" such roads if he had to pay for them, if and when he used them, but if he can be forced to pay for them in his federal income

taxes whether he uses them or not, there will be no obstacle to his use of these roads; and, consequently, there should ensue an artificially stimulated demand for products of the automotive industry. The industry, in short, is seeking an increase in government "intervention" to increase its sales and profits—just as industry in times past sought tariff protection for the same purpose, and as unions have sought and obtained political favors more recently; and the observation of which last-named development has converted much of business leadership to opposition to "interventionism," except, of course, where they expect to derive some benefit from it.

Disregards Principles of Capitalist Economics

The "Automotive Safety Foundation" appears to be oblivious of the fundamental economic principles governing the financing of public works of *economic* usefulness. Since the days of Adam Smith these principles have been well known. Smith expressed them as follows:

"When the carriages which pass over a highway or a bridge, and the lighters which sail on a navigable canal, pay toll in proportion to their weight or their tonnage, they pay for the maintenance of those public works exactly in proportion to the wear and tear which they occasion of them. It seems scarce possible to invent a more equitable way of maintaining such works. . . . As the expense of carriage . . . is very much reduced by means of such public works, the goods, notwithstanding the toll, come cheaper to the consumer than they otherwise would have done; their price not being so much raised by the toll as it is lowered by the cheapness of the carriage. The person who finally pays this tax, therefore, gains by the application more than he loses by the application of it. His payment is exactly in proportion to his gain. It is in reality no more than a part of that gain which he is obliged to give up in order to get the rest. . . .

"When high roads, bridges, canals, etc., are in this manner made and supported by the commerce which is carried on by means of them, they can be made only where that commerce requires them, and consequently where it is proper to make them. Their expense, too, their grandeur and magnificence, must be suited to what that commerce can afford to pay."

The survey lays particular emphasis on the "need" of city-dwellers for faster highway service [but says nothing of their willingness to pay, directly, the cost thereof—which is the only criterion by which demand in the economic sense can be established]. It asserts that, of total persons leaving central business districts in various cities, 40 per cent in Chicago move in and out by highway, and this percentage ranges upward as high as 100 per cent in the case of Houston. But such transportation, in many instances is slow. "In Los Angeles, from First to Tenth streets on Broadway, the progress since 1910 has been" from 10 min. 20 sec. by horse and buggy to 14 min. 12 sec. by automobile today. Authorities on urban transportation have frequently pointed out the enormously greater expense involved in getting urban workers from home to work by private motor vehicle rather than by the use of rapid transit facilities, but nothing is said in this report of this vastly less

expensive alternative to the fantastic sums which it proposes to spend on non-stop city streets.

In laying new emphasis on the desirability of urban street improvement by federal funds, the survey by no means suggests offsetting reductions in outlays for rural roads. While contending for enlarged appropriations for city streets, it is asserted that the plane will encroach on the motor vehicle for long-haul traffic; nevertheless, as an argument for continued heavy appropriations for rural roads, it contends also that truck transportation will increase. "Superhighways" for long-haul motor traffic are not advocated, in view of the emphasis on urban improvement. It turns out, however, that "a series of high-cost highways serving local traffic will in many cases overlap, so that the resulting highway is in effect a long-distance highway."

The "Automotive Safety Foundation" quotes with apparent approval the provision in the federal aid highway act which prohibits the levying of tolls on federally-aided highways—which, if exacted, while encouraging economically-defensible projects, would discourage the wasteful ones, and would not add to the crushing burden of federal taxation. These distinguished exponents of private and self-supporting enterprise likewise appear to agree with the conclusion of the "Toll Roads and Free Roads" report (April, 1939) of the Public Roads Administration, to the effect that an interregional system of toll roads could not be financed by tolls, because the potential users of these roads do not "need" them enough to be willing to pay a compensatory price for their use.

The specific evidence cited in the survey, however, scarcely bears out the conclusion that users of highly improved highways would not be willing to pay remuneratively for their use. Testimony is adduced to the effect that per-mile operating costs of a motor vehicle vary as follows on different roads: 7.8 cents on earth roads, 4.5 cents on gravel, 3.8 cents on pavement—indicating that a user could pay a substantial toll for either type of surface improvement and still be money in pocket, besides doubling the speed of his vehicle. An authority is quoted as asserting that \$2½ billions could be saved by the country as a whole "by a rural road program based on need." Those who save the \$2½ billions—i.e., the motor vehicle operators—could pay, say, \$2 billions of their savings in tolls, thus financing the construction "needed" for their benefit and still be money ahead, without having laid any burdens on general taxpayers.

One study, it is asserted,

"reveals that the cost of making four or five complete stops per mile on the streets of downtown Boston increased gasoline consumption 50 per cent over what it would have been in the absence of congestion."

It is further stated therein: "In New England the modern Merritt Parkway was constructed parallel to the old Boston Post Road. The presence of 116 traffic lights on a 48-mile section of the post road caused an average of 41 stops per vehicle, or nearly one a mile. It is estimated that the parkway, on the other hand, providing a free flow of traffic, would permit more than double the average speed of travel on the post road, at the same gasoline cost."

These instances do not suggest that substantial highway improvements—with all their advantages to a quickened post-war economic life—must rely wholly, or even largely, on the willingness of the overlaid income-taxpayer to finance them. Highway improvement would go forward after the war if such expenditures were entirely self-sustaining by levies on the users, just as capital improvement and rehabilitation will go forward on such a self-sustaining basis on the railroads, in housing, in manufacturing, and all other self-financed business.

This survey has practically nothing to say about rail-

Working Both Sides of the Street



THE PARADOX: The chairman of the industrial committee striving so valiantly to assure private business' post-war economic dominance is also the leader in the demand for unprecedented "public works" on highways—financed not in the capitalist way of "user pays", but 75 per cent at the expense of war-laden federal taxpayers

roads. It mentions the "major role" the highways are playing in "the movement of freight and passengers and military traffic." It is further asserted that "a nation with 34,000,000 motor vehicles and a million and a half miles of surfaced road for them to operate on, already had the most important weapon of warfare." With all this alleged reliance of the nation on highway transportation for its wartime requirements, the specific figures adduced are somewhat more modest. For example, "it is estimated that perhaps 200,000 of America's nearly 5,000,000 trucks are out of operation, yet the ton-miles of traffic being hauled on main highways has held at about the 1940 level of 46 billion ton-miles"—which is the same as saying that, under conditions of dire national need, the trucks have not been able to effect any increase whatever in their transportation service to the nation. The freight service rendered by the railroads rose from 373 billion ton-miles in 1940 to 725 billions in 1943, which affords a comparison of the degree to which the nation has relied on the two forms of transportation to absorb the increased traffic arising from the war; and to the comparative resiliency of the two methods of transportation in assuming an emergency traffic burden.

Further along this line, the survey states that, "the fact that our vastly augmented motorized forces during the past several years have been accommodated on the highways of the nation without the necessity for any major reconstruction attests to the success of federal planning for the emergency use of the highways by the armed forces." The well-known fact, of course, is that "our vastly augmented motorized forces" have moved almost entirely by rail, except at the scene of immediate manoeuvre, and a reasonable regard for candor on the part of the writers of this survey would have included an observation to that effect.

Transportation Without Taxation

This automotive group reports with approval the constitutional amendments in 14 states against the "diversion" of any part of gasoline or motor vehicle license fees to general governmental expenses—apparently believing that highway users, unlike users of railways, should be freed of sharing in general governmental expenses, proportionate to the magnitude of the investment in fixed plant.

Without mentioning the railroads specifically, the pamphlet, by implication, views with some complacency a dwindling role for them in the post-war transportation picture. It foresees a "trend downward in the amount of total freight carried per capita," combined with increased truck and air transportation. If such a forecast be made to come true by profligate expenditures of tax funds for the unnatural development of agencies of transportation with little or no elasticity for expansion in a wartime emergency, one may wonder just what nutrition will be available to keep the railroads alive so that the only transportation agency fitted to take on a suddenly expanded traffic volume may be on the scene when the next national emergency comes along.

The late National Resources Planning Board foresaw this dilemma and—apparently suspecting (correctly, it appears) that transportation agencies accustomed to feeding at the public trough were not going voluntarily to desist from the practice however loudly they might orate on "private enterprise" and oppose government "intervention"—frankly proposed that railroad improvements be provided at the taxpayers' expense. The railroads evinced no enthusiasm for the suggestion, not desiring to counter socialism in transportation by further

socialization. But, clearly, the automotive people are inviting some such outcome—for the nation cannot endure in a hostile world without efficient railroad transportation; and such a system cannot be on hand in time of war unless it can survive in time of peace. And it cannot very well hope to do so if it must seek its sustenance entirely from self-sustained commercial operation, withstanding the competitive attack of rivals supported by infinitely increasing appropriations from the public treasury.

The "Automotive Safety Foundation" in its report presents very little information which suggests the aptness of its title. It does reveal, however, that 40,000 people were killed and 1,400,000 injured in automobile accidents in 1941 and that in "the 15 years from 1927 to 1941, half a million people were killed on the highways of the United States." No correction for this carnage recommends itself to this "Safety Foundation," however, except more and bigger highways.

Eastman and O. D. T. Eulogized

PRAISE for the work of the Office of Defense Transportation and its director, Joseph B. Eastman, was the keynote of the twenty-second annual meeting of the Associated Traffic Clubs of America at Cleveland, Ohio, on February 24 and dedicated to the O. D. T. and its director. President Fred A. Doebber, traffic manager of the Citizens Gas & Coke Utility, presided. Paying tribute to the O. D. T. and Mr. Eastman at a luncheon session attended by 800 representatives of transportation and shippers, were W. M. Jeffers, president of the Union Pacific; John B. Keeler, president of the National Industrial Traffic League; Lachlan Macleay, president of the Mississippi River System Carriers' Association; and Chester G. Moore, chairman and general manager of the Central Motor Freight Association, Inc. Illness prevented Mr. Eastman from attending the meeting. Brigadier General Charles D. Young, deputy director of the O. D. T., responded for Mr. Eastman and the O. D. T. and accepted a silver plaque and leather-bound letters of congratulation from friends, commemorating Mr. Eastman's completion of 25 years in federal service.

Warn of Task Ahead

Each of the speakers, who paid tribute to the O. D. T. and Mr. Eastman, praised the part they had played in the handling of peak war-time traffic but forecasted more traffic and the need for greater effort on the part of transportation agencies and shippers in the months to come. Mr. Jeffers gave "due honor to a great American, an humble and simple man, who is a public servant and knows it." One of Mr. Eastman's virtues, he continued, was his use of "Main Street common sense of which there is more in Wahoo, Nebraska, than on Pennsylvania avenue."

Mr. Jeffers paid tribute to the war effort of the man in overalls and praised the loyalty of railroad employees who, he said, had had no notion of striking but had been protesting a condition under which their wages were remaining stationary while those in other industries were advancing. The railroad employee, he said, is doing as important a part in the war as the man at the front. Because of his training and will to get things done, the

railroads have accomplished the impossible, he stated. The railroad employee, Mr. Jeffers asserted, does not need entertainment and rest periods to keep him on the job. He also said that the railroads could continue their record of performance only so long as they have sufficient manpower, materials and equipment.

Mr. Keeler warned that increases in the tempo of the war, coupled with manpower and equipment shortages, will tax the ability of both shippers and transportation agencies to keep wartime traffic moving. Mild weather, he said, has prevented serious trouble for our transportation system, which is under a severe strain.

Co-operating with Shippers

Mr. Keeler, in commenting upon the policy followed by the O. D. T., spoke in part as follows:

"Early in its existence, O. D. T. adopted the policy of consultation with carriers, shippers and others who might be interested in or affected by contemplated orders and demonstrated a desire for all facts and viewpoints as to any proposed order before its promulgation and, with one or two unfortunate exceptions, has adhered to that course. This general policy did more than anything else to marshal the complete support, and bring about the close co-operation of the affected parties, with the result that thus far our transportation systems have met the demands of war. As shippers or receivers we are naturally prone to be influenced and guided by our own particular problems and at first instance to view any contemplated order from that angle. However, the policy of O. D. T., of consultation with and seeking advice from interested parties when a proposed order was in the making, and explaining to such parties the intent, purpose and need for such order, brought about the result that, generally, all final orders issued were well-considered ones. Further, there generally has been no hesitancy on the part of O. D. T. to amend any of its orders when the need therefor was clearly shown by the practiced application of the order or orders.

"O. D. T. has applied controls in a spirit of leadership without the use of arbitrary methods. It has been fundamentally fair and has sought and relied upon and received the cooperation of shippers, receivers and carriers. This can be attributed to the realism with which the O. D. T. generally approached its duties and the intelligence and understanding it displayed and applied in going about its problems to achieve results, and this in turn can be attributed to the director of O. D. T. who selected its staff. There can be no doubt that O. D. T., through its policies and actions, has made and is making a most valuable contribution to the war effort. It has done this with a minimum of interference to the railroads and users thereof."

Mr. Moore characterized Mr. Eastman as a "man who has more interest in public service and less in his own career than any man I have ever known." In discussing the motor carrier situation, he said in part:

"Mr. Eastman's problem with the motor truck was accentuated by the fact that in the face of a virtual curtailment of new equipment and a galloping obsolescence of existing units, the transportation job to be done was greater in volume than ever before. More goods had to be hauled with fewer vehicles, restricted manpower, impaired maintenance and a drastic shortage of tires and, at times, of fuel.

"Many administrators would have resorted to drastic orders. Mr. Eastman does not believe in that technique. Instead, by using a minimum number of orders to give the program direction and then by depending upon the co-operation and the initiative of the motor carriers, he

has accomplished a job that could not have been done any other way.

"The carriers of property by motor vehicle are still on wheels, are carrying the greatest load in their history, and are doing it in the face of almost unbelievable hardships, even for a nation at war. I do want to give warning, however, that the financial condition of the for-hire motor carriers has reached a desperate and alarming stage, and although there are inevitable increases in cost in every industry, brought about by war conditions, most of them have an opportunity to offset these costs by increased revenues. In the trucking industry that has not been found possible as yet. The lack of cash reserve and the impossibility of deferring maintenance charges, put our industry largely on a cash basis and, where the operating expenses exceed the cash income for even a relatively short time, the result is obvious and inevitable.

"I say our condition is alarming, because a survey of 200 motor carriers throughout the United States for the month of December, 1943, shows an operating ratio of 109.2 per cent or, in other words, they spent \$109.20 for each \$100 received in revenues. If something isn't found quickly to cure this condition, it will, of course, be impossible, as an industry, to continue at the high rate of efficiency we have been able to develop.

"Intercity bus lines are carrying today a majority of persons in intercity travel and handling a substantial, though not a major, portion of the passenger-miles. They are doing a grand job and getting the same kind of help we have received from O. D. T. and I can testify to the high regard and esteem in which the bus people hold Mr. Eastman.

"Not many of us have realized that the creation of the Office of Defense Transportation pitched into Mr. Eastman's lap a field of transportation to which he had paid relatively little attention. Until the war, the problems of the local passenger carriers had been largely ones for handling by the state regulatory commissions. Suddenly their problems became a troublesome part of the transportation job handed to Mr. Eastman as head of the O. D. T."

Mr. Macleay said that the ability of the waterways to aid in our war effort was due to the assistance they received in their development from the O. D. T. and Mr. Eastman. He cited the construction of ore carriers, the location of boats that could be used on the waterways and a training program for river pilots as instances in which the O. D. T. assisted the waterways.

Consider Manpower Shortage

The seriousness of the manpower shortage confronting transportation was recognized by those attending the meeting and as a result a resolution was adopted which provided that when the occasion arises, the officers of the association will utilize the full force of the organization to maintain the personnel of the railroads and other transportation agencies. Another resolution authorized the executive committee to develop a program for "professionalizing" traffic management. It was also suggested that the Association undertake to "sell traffic management to management."

Officers elected for the ensuing year are as follows: President, Fred A. Doebber, re-elected; executive vice-president, Charles W. Braden, general traffic manager of the National Distillers Products Corporation, New York; secretary-treasurer, R. A. Ellison, manager of the Transportation department of the Cincinnati Chamber of Commerce; and vice-president, Education and Research, Dr. G. Lloyd Wilson, professor of transportation of the University of Pennsylvania, Philadelphia.

Railways Increase Ferrous Scrap Production 30 Per Cent

Well planned national organization, with cooperation and aggressive drives on all roads, brings success

ANOTHER remarkable chapter of railway performance in wartime comes to light with the revelation that the railways of this country produced almost 30 per cent *more* ferrous scrap in 1943 than in the previous year. Bert C. Bertram, chief of the railroad unit, industrial salvage branch of the salvage division of the War Production Board, summarizes railway reports to the Bureau of Mines, to show that the railways produced 3,314,986 net tons of ferrous scrap which was sold to dealers and consumers in 1943, surpassing the 1942 total by 757,807 net tons and accounting for 27 per cent of the national grand total production of 12,196,337 net tons ferrous scrap collected by the railways and manufacturing plants engaged in fabrication work. These railway production figures do not include the large tonnage of ferrous scrap wheels and other items handled with foundries under toll agreements.

Railways a Dependable Source

Although the railways long have been recognized as one of the largest and most dependable sources of purchased scrap, their 1943 production record is all the more remarkable in light of the fact that this accomplishment was attained during a period of severe governmental restrictions on new rail, track fastenings, equipment and critical materials; in the absence of the normally large retirement and demolition programs for obsolete locomotives and cars; and during a time of broad expansion of salvaging and reclamation practices. The influence of extensive equipment retirement is apparent when it is considered that during the nine-year period 1932 to 1940 inclusive, the railways retired 789,581 freight cars, 15,917 locomotives and 12,202 passenger train cars, thus producing approximately 1,500,000 net tons of ferrous scrap annually from this source alone.

In 1943 every available unit of rolling stock was pressed into service to handle some 725 billion ton-miles of freight traffic and about 85 billion passenger-miles. Freight cars that long since had seen their best days, obsolete and less efficient locomotives and outmoded passenger train equipment were shopped, patched, repaired and kept rolling to meet the emergency. How then, in the absence of this prolific source, was it possible for the railways in 1943 to rise to the need and surpass their 1942 production of ferrous scrap?

How the Job Was Done

Long before World War II focused attention on the imperative national need for ferrous scrap, the railways had well-organized scrap and reclamation departments. As far back as 1933, more than 170 shops and other facilities were reported as specially equipped and operated for the handling of scrap and reclamation projects. Depression periods taught them the value not only of reclamation practices but also of specialized scrap sort-

ing and grading to bring the highest market prices. Fully 65 per cent of railway scrap is carefully sorted, graded and prepared prior to shipment.

In 1939 when the Advisory committee to the Council of National Defense first emphasized the need for scrap, all of the railways were actively engaged in scrap production and many were supplying large quantities of relay rails for defense industries. Furthermore, the railways were the first to cooperate with the Office of Price Administration in promoting price-fixing procedures designed to discourage producers and dealers from hoarding scrap for higher prices.

Late in 1941 the WPB divorced the Bureau of Industrial Conservation from the Iron and Steel branch and in April, 1942, Mr. Bertram joined the railroad unit of the organization as salvage director charged with the duty of increasing railway scrap production and expediting the release of relay rails for the armed forces,



New York Central Scrap Goes to War



The Burlington's Intensive Scrap Drive Was Headed by President Ralph Budd and a Group of System Officers

defense plants and war industries. In the meantime many of the railways, acting on their own initiative and later others at the request of the railway scrap unit of WPB, appointed salvage directors. As the WPB organization campaign progressed, the wholehearted cooperation of the railways was evidenced by the appointment, within a few weeks, of some 556 emergency salvage directors, recruited from among the officers of as many railways, and more than 9,000 other employees to act as aggressive committees directing scrap gathering activities on every mile of road.

The effectiveness of the organization through cooperative effort is clearly shown in the accompanying chart, beginning with low of 194,654 net tons of ferrous scrap produced in June, 1942, and the progressive increase developed during the continuation of the work, with the exception of the seasonal drop during the winter months.

Salvage Meetings Gave Needed Impetus

However, the upward trend began again in January, 1943, and continued until a peak of 298,759 net tons was reached in April. There followed a continuous recession until the turn came in October under the impetus of the second national railway scrap conference, sponsored by the WPB and comprising a series of nine regional meetings held at strategic points throughout the country during October and November, 1943. Again the influence of these informal meetings of railway salvage directors, railway executives, representatives of railway labor unions and officers of the WPB was revealed by the sharp upward production trend, as shown by the production chart.

Again monthly production soared and reached a peak of 303,320 net tons collected and shipped in December, 1943.

Despite the fruitful efforts inaugurated in 1942, railway salvage directors and scrap committees continued their efforts in 1943, with the result that scrap clean-up drives accounted for thousands of tons of dormant scrap. Often headed by chief executives in person, traveling over the railways in business cars, on motor cars and on foot, earnest efforts were made to interest every employee. Scrap committees often were authorized to make decisions on the ground in questionable procedures regarding specific items. Properties were combed from

fence to fence; underground pipe lines, ferrous rail rests, steel guard rails on bridges and in tunnels, obsolete signal towers—all were among the items classed as scrap and destined to boost production. Contrary to normal procedure, costs of scrapping were often ignored, provided that an appreciable amount of ferrous scrap could be produced.

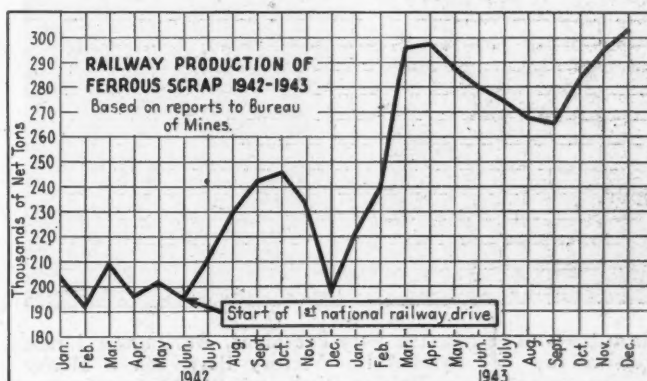
Following a pronounced recession in scrap production during the summer of 1943, the regional meetings held last fall, as the second national railway scrap conference, were devoted primarily to serious consideration of improving scrap gathering organizations, studying the factors that limited production, and developing additional fruitful sources. Means were developed to enlist and maintain the active interest of every railway officer and employee, from chief executive down through the ranks, and ways of providing frequent and periodical follow-up measures were devised to keep the entire railway personnel scrap conscious. Despite the several restricting factors and intensive efforts during the preceding 15-month period, railway officers, scrap committees and union members tackled the problem with renewed vigor, determined to search out dormant scrap and increase its production.

The Results of All-Out Cooperation

As the result of the intensive personal efforts of the chief executive of one of the roads in the Southwest, the monthly production of ferrous scrap on that road was boosted to 4,100 net tons, compared to a normal production ranging from 1,700 to 1,800 tons, and the nine months production of scrap metal increased 57 per cent over the same period of 1942. Every employee on that road was convinced that the "big boss" wanted more scrap, particularly when on the initial trip over the road and after calling for all-out efforts, he was heard to reiterate at one point after another "I'm coming back later to look you over!"

Scrap production boomed on every division of an 11,000 mile system after the second scrap drive was launched by the president and executive vice-president, who personally classed more than 300 tons of materials as ferrous scrap at one of their large shops on the first day of the drive. Included in the accumulation were air compressors, boilers, line shaft hangers, pumps and many other items which were being held for possible future use but for which no definite or reasonably early need could be proved.

Through the aggressiveness of the emergency salvage director of a large Eastern system, more than 600 tons of ferrous scrap were obtained by dismantling obsolete power shovels, cranes, ditchers, snow plows and flangers which had been set aside for repair or rebuilding. With an appreciable decrease in the demand for relay rails,



another large system, serving the Midwest and the West, reclassified some 3,000 tons of relay rails as rerolling stock material urgently needed for the production of hospital beds, railroad and industrial tools and other products.

Despite an intensive campaign in 1942, the 40,000 employees of another 10,000-mile system serving the Southwest produced some 30,500 tons of scrap in a six-month period—enough to meet the scrap iron requirements for building three battleships, with enough left over for a cruiser. In this instance the "Victory scrap box" plan accounted for appreciable quantities, for, with such boxes located in prominent spots in yards and terminals, it is a frequent occurrence for employees to walk 100 ft. out of their way to pick up small pieces of scrap and deposit them in the receptacles.

In another instance, one of the southern roads donated an old bridge on an abandoned branch line. Previously considered impractical for scrap because of high cost of removal, the structure provided excellent demolition practice for Army engineers and yielded 186 tons of ferrous scrap for the drive.

The success of the 1943 scrap drive was assisted materially by the cooperative efforts of the officers and members of the railway brotherhoods and unions. Through careful observation and systematic reports, more than 1,000 fruitful sources of scrap iron and steel were developed which yielded substantial quantities of scrap iron and steel.

The successful accomplishments in getting out the scrap also may be ascribed in part to the type of organization employed. Unlike the industrial drive, in which the industries were approached through 12 district WPB organizations, each jealous of its territory and endeavoring to surpass the other districts in its efforts, the railway unit was organized on a national basis, without regard to state lines. The very fact that this type of organization is similar to that of the railways themselves accounted for its adaptability and effectiveness.

Aggressive Action Still Needed

How important is ferrous scrap in our war effort? Last year 62,608,000 net tons of iron and steel scrap were melted down, compared to 60,263,840 net tons in 1942 and the peacetime top of 42,566,20 net tons in 1937. The tremendous requirements of all-out war are

Classification of Ferrous Scrap Produced by United States Railroads in 1943*

Classification	Net Tons
No. 1 Heavy Melting Steel	691,766
No. 2 Heavy Melting Steel	6,500
Low Phos. Scrap	67,667
Cast Iron Scrap	800,330
Turnings and Borings	98,886
Rerolling Rails	428,596
Scrap Rails	352,872
All SAE Low Alloy Steels	329
High Speed Steel	21
Chromium-Base Stainless Steel	16
Chromium-nickel Stainless Steel	8
All Other Prepared Scrap	557,619
Unprepared Scrap	307,808
†Miscellaneous Scrap	2,568
Total All Grades	3,314,986

*Source: U. S. Bureau of Mines.

†Not included in reports to Bureau of Mines.

emphasized by the fact that more than twice as much ferrous scrap was used by our steel mills during 1943 as the maximum yearly use of 30,016,000 net tons in 1917, during World War I. Scrap used last year by our steel mills represented 860 lb. for every person in the United States. National steel production, for defense and war purposes, used 266,640,960 net tons of ferrous scrap in the four-year period of 1940-1943, or more than all the scrap used during the seven-year peacetime period of 1930-1937.

Suggest Sources of Dormant Scrap

A bare nine-week's supply of purchased scrap, a backlog of two-week's requirements of home scrap and a ten-days' stock of pig iron at the steel mills clearly show that our margin for national safety is none too large. While it is estimated that scrap production will be sufficient to sustain steel production during the weeks immediately ahead, there is every reason for railway scrap organizations to exert their every effort to maintain as steady and as large a production as possible.

"As clean as a hound's tooth!" was the common expression used to describe the condition of railway properties at the end of 1942, when scrap committees reported the results of their drives—and yet, through persistent and aggressive efforts, those same organizations carried on so well in 1943 that they increased production by 15 to 57 per cent in many individual instances, and ended the year by producing a grand total which exceeded that of 1942 by 30 per cent.

Many railway officers in charge of scrap production and the chief of the railroad unit of the WPB salvage division are confident that careful and thorough methods will produce still more dormant scrap from railway properties. Among the probable sources are quantities of old bridge girders and beams that for years have been stacked as emergency material insurance against washouts, floods or fire. Salvage directors point to the promised minimum allocation of 1,800,000 tons of new replacement rails, the WPB program for 50,000 new freight cars, and the promise of additional locomotives for 1944 as evidence that scrap production will be increased by the release of larger quantities of used rails and the probable demolition of more of the older and obsolete equipment than during the last two years. With a precipitous drop in the demand for used rails by war industries and the armed forces, 49,000,000 lineal feet of relay rails remain stacked on the railways throughout the country, and it is probable that a large proportion soon will be reclassified as reroller rail, to be removed to the steel mills for the production of sorely needed materials. With our armed forces everywhere on the offensive, and with an urgent need for more railway equipment and material to help back the attack, the need for still more ferrous scrap is urgent.



Edward Flynn, Executive Vice-President, Burlington Lines, Painting the "V" Symbol for Victory Scrap on a Heavy Bridge Girder

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Railroad Materials After the War*

Products now in use will be improved—War-time developments will offer new materials and products—All departments are affected

By C. B. Bryant

Assistant to the Vice-President (Research and Tests), Southern

STRICTLY speaking, there are no new materials in the world. All of the raw materials which we derive from the earth have always been available for the use of mankind. The principles of behavior of materials do not change and what we call natural laws are the same today as they have been for all time. When we speak of new materials, we really mean materials which we have just found out about and the development of new materials is actually the pushing back of the veil of ignorance which has previously covered them. Therefore, in attempting to forecast future uses of materials, I am attempting to forecast technologic developments which will be made by thousands of researchers and engineers. Obviously, no exact forecast can be made by any individual. There are certain trends, however, which forecast logical developments.

Under normal peacetime conditions, railroads consume about one-fifth of the total production of steel in the United States. This represents a tremendous expense and, if there is any means by which that expense may be reduced and the life of our steel products increased, we must adopt it. It has been estimated that about one million tons per year of steel are lost by corrosive action, a large part of this loss occurring on railroads. As we look ahead into the post-war period, we are seeking for means of reducing that loss. Some of the new metals, particularly aluminum, may be an answer to part of that problem. Under most conditions aluminum is non-corrosive and should have long life from the standpoint of corrosion. We are making studies at the present time of the possibilities of aluminum in freight cars.

Carbon Steels Will Predominate

Steel itself may be rendered relatively non-corrosive by various alloy additions. These do not entirely prevent rusting but they materially retard it and low alloy steels having a corrosion life several times that of ordinary carbon steel are now available. They have been recognized to a considerable extent in freight-car construction but are still not generally used. Such uses will probably increase. Stainless steel has already been recognized in a major way in the construction of passenger cars. Due to the high cost of stainless steel resulting from its high alloy content, it would appear that passenger equipment is as far as we shall be able to go in the use of stainless steel.

Regardless of what we may do in substituting non-corroding or slowly corroding steel, unquestionably our major use of steel products will in the future continue to be the ordinary carbon steel variety which requires

some form of protective coating. This means paints. The paint industry is changing rapidly with respect to the types of materials used. The plastics industry has developed a large variety of synthetic resins which, when incorporated into paints, improve the durability and protective action in a major way. Many of the synthetic resins we know about we are not able to use today because of military priorities. It seems certain that after the war these resins will be largely used in the protection of railroad equipment and structures. Similarly, rust-inhibitive pigments are being improved and new developments are taking place.

Metallic Coatings

It is possible to protect steel by applying coatings other than paint, such as non-rusting metals, particularly zinc. Everyone is familiar with ordinary galvanized steel, in which the product is coated and protected by dipping it into a bath of molten zinc. This process can only be used on small-size articles. There is a method, however, by which a zinc or other protecting metallic coating can be applied to large structures, such as steel bridges. By means of a high temperature torch a wire of zinc fed through the flame is reduced to a molten condition, in which state it is picked up by a blast of compressed air and is sprayed on the surface to be protected just as paint would be sprayed. For several years, I have been following the performance of a large railroad bridge which has been protected by a sprayed zinc coating. The process is expensive at the present time but it is effective. There will be many places where metallic coatings of that sort can be used to extend the life of railroad equipment and structures with savings in overall cost.

In some of our water tanks we are experimenting with another type of protection. It has been found that if the steel shell of a water tank can be made the cathode of an electric cell and a continuous electric current passed from the steel shell into the water and thence to a graphite anode suspended in the water, the steel will be rendered non-corrosive. We have three such tanks on our railroad which we have been watching for some years. So far, although there is no paint or other protection on the interior of these tanks, they are absolutely free from corrosion and will probably never fail on that account. For tank work, we can say that this method is successful. We have not worked out means of applying protection of this sort to other structures but it is not unreasonable to anticipate that cathodic protection may be made available for bridges, rails and other similar applications where our corrosion losses are large.

In the field of timber construction, we have in the

* Abstract of a paper presented at the railroad session of the annual meeting of the American Society of Mechanical Engineers, held at New York on December 2, 1943.

past suffered large losses due to decay and at the present time our uses of timber in structures are almost entirely of creosoted material. One of the disadvantages which we face in using creosoted timber arises from the necessity of air seasoning timber for a year or more after it is cut before it is sufficiently dried to receive the creosote properly. This forces us in purchasing to anticipate our requirements of timber about a year and a half to two years. The storage of timber in seasoning yards represents a large monetary outlay and there is also the expense of handling the material.

One of the timber treating companies has been experimenting for several years and has just announced a method of drying cross ties which will permit green timber to be taken immediately to the creosoting chamber where it is dried and receives the creosote treatment, all within a space of about 24 hr. Under this new method we can fell a tree today and lay the crossties in track the day after tomorrow. The Southern Railway laboratory has done considerable testing of crossties produced by this method, involving full-sized testing to destruction of some 400 ties. There still appear to be minor improvements necessary before this method of quick drying and treating can be considered commercially established but we are so close to a full acceptance of the method that it seems certain it will be commercially adopted in the very near future. The economic advantages are obvious.

In the reduction of our losses by decay and corrosion, we are interested in new types of materials which will not be subject to those actions. Asbestos-cement shapes, for instance, have been used to some extent for roofing and siding in buildings and this use will increase. Premolded gypsum lumber can also be used in protected locations, such as in sheathing for roofs. The glass industry is producing structural glass which has similar applications. Glass can be made in cellular form so that it will not only serve a structural purpose but will be useful as an insulating material.

Losses Through Wear

While the losses of material due to corrosion and decay are serious, they are slight in comparison with the actual wear and tear of material in railroad service. In wheels we suffer great losses due to abrasive wear of metal from the treads. Methods of heat treating the steel in wheels have been developed and greatly extend their life. Such heat-treated wheels are used on most of the high-speed passenger trains and on certain locomotive wheels.

On a conventional railroad axle, the journals on which the bearings are carried, gradually wear away until a condemning dimension is reached, at which time the axles must be scrapped. We can extend the life of such axles many times by use of anti-friction bearings which avoid abrasive wear on the journals.

Metal spraying can be used to apply hard steel coatings on parts which have worn in service. These parts can then be remachined to their original size and returned to service. Metal spraying is already used to a considerable extent in the automotive industry in building up worn crankshafts, etc., and is being used to a minor extent in railroad operations in building up piston rods and similar parts.

As the method becomes improved, it will doubtless have much wider application in railroad service in building up other parts when worn, thus enabling their continuance in service.

One of the wartime developments in preventing wear is the electro-plating of wearing surfaces with hard metals, particularly chromium. This method is being

used almost entirely in military applications and is not available to us today. Internal combustion engines electro-plated with chromium on the inside of the cylinders and on the outside of the piston have greatly lengthened service life.

There are many parts of railroad equipment where wear takes place in which flame hardening, which is a type of localized heat treatment, can be applied in order to reduce wear. In locomotive crossheads, the flame hardening of some of the steel surfaces will prolong the intervals between renewals. In our manufacture of frogs, we are experimenting with the flame hardening of certain areas of the rail comprising the frogs so as to reduce the wear at those points where the abrasion and impact of wheels is most severe. The process looks very promising and will be extended.

Saving Weight

The great weight of railroad rolling stock focuses attention on any method of reducing weight so as to make possible hauling more pay load without increasing total weight of equipment plus load. Aluminum, already mentioned as having advantages in resisting corrosion, also has advantages in reduction of weight. A number of experimental aluminum freight cars have been built and others are projected. The decision on uses of this sort is strictly an economic one and we must balance the reduction in weight and the resulting lowering of operating expense against the increased cost of equipment built with aluminum. It is too soon to state just where and how extensively aluminum will be used in freight-car construction. Unquestionably it will find large applications. Magnesium is still too new for us to hazard any guesses as to whether it will be available and attractive in railroad equipment.

Even in all-steel car construction, it is possible to make substantial reductions in weight by taking advantage of the high strength of the low-alloy steels. In an ordinary 50-ton freight car it has been calculated that we can save approximately three tons by the use of low-alloy steel instead of ordinary carbon steel. For these three tons of weight saving we must invest under present conditions an additional \$126.00 per car. Assuming an extremely conservative figure of operating saving, it appears that the additional expense of the high-strength low alloy steel should be recovered in a period of approximately five years and that for the remaining service life of the car, probably another 20 years, the weight saving would accrue as an operating economy. Unquestionably there will be many more cars built of steels of this type in the future.

We need rolling stock of better overall performance than we now have. The high-speed tank-car trains transporting petroleum to the east coast have shown considerable weakness in our conventional trucks and other parts which perform satisfactory at low speeds but which must be improved in order to permit continued high-speed operation. Our spring action is imperfect at high speeds. In tank-car operations this situation is being met at least for the time being by an extensive program of equipping tank cars with snubbers to restrict the harmonic bouncing of the springs.

The use of anti-friction bearings in locomotives and cars will improve their performance greatly, and, as you know, such bearings are virtually standard equipment on all new passenger cars and most new locomotives. The economies of anti-friction bearing applications in freight equipment are not fully determined as yet. The manufacturers of anti-friction bearings believe that there is an economic advantage in their use in freight service but as

yet railroads have not been convinced. The fact that this subject is debatable and that it is being discussed, implies that there is a good possibility of an economic use of anti-friction bearings in freight equipment and the post-war period will doubtless see a considerable number of freight cars so equipped.

We suffer a certain amount of damage to commodities being handled in box cars due to condensation of moisture on the inner surface of box-car roofs which drips down and damages the lading. Some form of insulating material which could be applied cheaply which would prevent this sweating and dripping, would avoid such damage. We need non-porous linings for the floors and in the sides of box cars. We frequently have damage claims due to oil or other deleterious materials soaking in to the conventional wood floors or sheathing and later feeding back into easily damaged commodities, such as cigarettes, sugar, flour, etc. A non-porous lining material which would not soap up such materials would be of great advantage.

Value of Wartime Developments

There is a large group of materials which we are watching because they will be available in volume after the war, the uses for which we do not now appreciate. Aluminum, for example, is now available at an annual rate of about two billion pounds, which is more than ten times the maximum rate of pre-war production of aluminum. All of this is now going into military uses. When, after the war, these uses no longer exist, this tremendous capacity will be available for ordinary industrial purposes and doubtless many applications we do not even think of today will be found.

In the field of steel, the war has forced on us, because we do not have enough alloys to use in the conventional way, a new series of steel chemistries. These have been developed under the name of the National Emergency Series of Steels. The basic theme of the NE steels is the use of smaller quantities of alloy than have been conventional and it has been found under the impetus of wartime demands that such steels with low-alloy content can by proper methods of heat treatment be used effectively where high-alloy steels were formerly thought necessary. Since alloys are much the most expensive elements in steel, the NE steels will offer us a means of using alloy steels in more places than have been economically possible in the past.

In the new field of plastics, now so rapidly developing, there will doubtless be a great many applications in railroad service. We have already used plastics in the interior trim of passenger cars but so far have made no appreciable applications for purely utilitarian purposes. One such possible application which we are discussing is in providing better seals for the journal boxes on our freight equipment. A plastic self-conforming journal-box lid coupled with an effective dust guard would greatly improve bearing performance.

The plastics industry has been trying for some time to produce a synthetic bristle suitable for paint-brush manufacture. One such synthetic bristle is being marketed in considerable volume. Unfortunately for us, synthetic bristles are restricted to military uses at present. It is my understanding that they are entirely successful as a substitute for the natural bristle and we shall be independent of the importation of natural bristle for paint-brush manufacture in the near future.

The Association of American Railroads is at present working on specifications for air-brake hose which will avoid the use of natural rubber and in the near future you will be riding on trains in which the brakes will be

controlled by air carried through synthetic rubber hose. The War Production Board has just issued instructions requiring rubber hose manufacturers to adopt synthetic materials in such hose in order to release our remaining supplies of natural rubber for uses where substitutes have not yet been worked out.

The subject of locomotive design is an extremely active one at present and important changes are in prospect. In our Diesel locomotives improvements in Diesel engines, probably the use of smaller cylinders and more cylinders per engine seem likely. The present costly and heavy electric transmission may be supplanted in part by some direct mechanical drive, probably through fluid couplings.

Commercial installations of gas turbines are already operating successfully and on one locomotive in Switzerland a gas turbine is now in use. Because of wartime restrictions, we are unable to learn much about this Swiss installation. American manufacturers of gas turbines have designed locomotives and are waiting only for the release of materials in order to construct some for use in this country.

Because of fuel considerations, it seems certain that the steam locomotive burning coal will continue to be the chief motive power used on American railroads. In this type of locomotive also development is proceeding rapidly.

Boiler pressures of 500 lb. per square in. are in prospect and this will improve locomotive performance as well as economy. A direct-drive turbo locomotive is under construction. This design would have great advantage over the reciprocating type in avoiding counterbalance difficulties and in permitting higher speeds without destructive effect on track and structures. A multi-cylinder steam locomotive is on the drafting boards. This proposes to use a large number of small cylinders directly connected to driving axles. No counterbalancing difficulties would exist.

Other New Processes

There are several new processes available which will doubtless have railroad applications. In the rapidly expanding field of electronics, now so much advertised, there are valuable methods of process control, particularly heat treating, which will be of help to us. The induction heating of metals for processing and for heat treating will enable us to control quality of critical parts better than at present.

The use of infra-red heat for the drying of paint is already common in the air-craft and munition industries. The use of infra-red drying enables paint to be applied and re-coated within a period of a few minutes. When we build freight cars under present conditions, it is necessary for the car builder to have a very large paint shed together with expensive track storage facilities in order to take care of the three coats of paint which are conventionally used. If all three coats could be applied with assistance of infra-red for drying without moving the car and all within the space of a few minutes that element of cost would be materially reduced.

The post-war period will make available to us better methods of inspecting materials, such as by use of X-ray and by the use of radium emanation. Military uses are requiring all possible output of equipment of this type under present conditions. One railroad has employed the radiographic testing of welding, which was applied to a long stretch of welded track installed in a tunnel.

Railroads have a tremendous field of new materials and processes to consider and to choose from in shaping post-war activities.

Communication . . .

Dramatic Briefs of Railroad History

WASHINGTON, D. C.

TO THE EDITOR:

Railway Age, May 6, 1939, printed an article entitled "Golden Spike Days." It was an account of the production of the motion picture "Union Pacific," publicized during the year 1939, and now reappearing on the screen. Although I saw the picture in Seattle in 1939 I have again seen it with renewed interest; particularly so as I am personally familiar with the locales of the picture and have stood directly on the geographic location where the Golden Spike was driven. This picture is of major historical significance in the industrial development of our country and I believe all Americans who have an affection for their country can view the glamorous scenes only with deepening affection and patriotic pride. There is a detail of geographical import in the picture that is, however, worthy of correction.

With only one exception that I know of all references in public discussion, oral or written, as is also true of the motion picture, place the location of the driving of the Golden Spike at Promontory Point, Utah. The only exception I know of is the correct location given by *Railway Age* in the article of May 6, 1939, where the simple reference Promontory, Utah, appears. Promontory Point, however, is located on the Lucin Cutoff rail line across Great Salt Lake where the cutoff is intercepted by the extreme southerly projecting point of the Promontory Mountains in the northerly reaches of the lake.

The historic spike was actually driven at Promontory Summit, a natural pass in the Promontory mountains at a "technical point" 53.1 miles northwest of Ogden, Utah, and 772.9 miles east of San Francisco. There, still remaining, stands a weather beaten stone shaft four feet high, on the north exposure of which appears the record of a famous event of the American frontier. It reads: "Last spike completing first transcontinental railroad driven at this point, May 10, 1869."

The word "point" is of engineering significance rather than topographic or geographic. The metallic sound of the spike maul blows that drove the spike were carried by telegraph to the Atlantic seaboard and the Pacific Coast. They were heard in the White House by General U. S. Grant, then president. Chief Engineer Grenville M. Dodge, who is dramatically pictured in "Union Pacific," served under General Grant in the civil war with the rank of major general in charge of railroad maintenance and construction. Theodore D. Judah, the able and courageous young engineer who surveyed the route of the Central Pacific across the Sierra Nevada mountains of California, died before the work of construction was commenced. A bronze life-size likeness of Theodore Judah now stands in front of the entrance to the Southern Pacific (original Central Pacific), station in Sacramento, paid for by the railroad employees. Dodge Street, in Omaha, Nebraska, in which is located the general office building of the Union Pacific, was named for General Dodge.

The scene in the picture "Union Pacific" wherein Mollie the heroine, so finely acted by Barbara Stanwyck, operates a telegraph key during an Indian raid and tells her besieged male companions, "Mr. Calvin taught me how to operate" has reference to a youthful dispatcher who, in later years, became one of the ablest operating executives that the railroads of the United States have produced. Edgar E. Calvin, a kindly, quiet man, native of Illinois, was a telegraph operator for the pioneer Union Pacific. Before his death he attained much prominence in the executive affairs of the Union Pacific and Southern Pacific during the days of their financial control by Edward H. Harriman who, during the early years of the 20th century, was referred to in the public prints as the "Napoleon of the railroad world." Mr. Calvin became vice-president of both Union Pacific and Southern Pacific and was, also, for a period president of Union Pacific. Prior to his death on September 9, 1909, Mr. Harriman was president of both railroads.

The original Central Pacific, where the Sierra Nevada mountains are pictured in "Union Pacific," was built from Sacramento across the Sierras and met the Union Pacific construction at Promontory, Utah; it is now known as the Sacramento and Salt Lake divisions of the far-reaching Southern Pacific Lines. Until the

completion of the Lucin Cutoff directly over the northern depths of Great Salt Lake, November 26, 1903, under the financial sponsorship of Edward H. Harriman, traffic on the Central Pacific operated over the original line through the Promontory mountains.

Where, in 1869, were gambling houses, dance halls, and frontier scenes of the construction camps in the locality where the Golden Spike was driven, there now remain only a ranch house and general store; over the door of the latter appears the crudely lettered words: "Promontory Post Office." Nearby, is the historic monument referred to and through the far-reaching whispering sagebrush and bunch grass range, cattle quietly graze. A primitive earthen roadway from the settled communities of northeastern Utah is the only vehicular entry to this now isolated locality.

When the Lucin Cutoff was completed between Ogden and Lucin, Utah, (the latter being the junction of the original Central Pacific detouring to the north of the lake), the maximum grade between Ogden and Lucin was reduced from 90 to 21 ft. per mile. With this diversion from the northerly detour, 4000 deg. of curvature was eliminated, and the distance between Ogden and Lucin was shortened from 147 miles to 103. The Lucin Cutoff is but three-tenths of a mile longer than an air line. It cost \$9,000,000.

In the dramatic finale of the motion picture "Union Pacific" a modern streamliner train flashes meteoric-like as it moves at high speed along the Union Pacific Railroad of today. It is a spiritual successor to the primitive wood-burning locomotives and wooden passenger cars of the 19th century. It is truly a reflection of the American spirit that has made this nation great.

It is probable that but few railroad men know that the pioneer Union Pacific-Central Pacific, the Northern Pacific, and other western railroads were built according to track standards of the historic Baltimore & Ohio. During the first half of the 19th century track construction standards differed in various parts of the United States. The Baltimore & Ohio and the "Vanderbilt Lines" (the latter being the present New York Central System), however, conformed generally to a gauge of 4 ft. 8½ in. There was much discussion in Congress, and other quarters, as to what the gauge of the Union Pacific and Central Pacific should be. Finally, the Enabling Act, Senate Bill 364, approved by President Lincoln, July 2, 1862, stipulated in Paragraph 2, Section 12:—

"The track upon the entire railroad and branches shall be of uniform width, to be determined by the president of the United States so that, when completed, cars can be run from the Missouri river to the Pacific Coast; the grades and curves shall not exceed the maximum grade and curves of the Baltimore & Ohio Railroad****." The maximum grade of the Baltimore & Ohio in 1862 (when legislation was first introduced), was 116.2 ft. per mile, and 10 deg. the maximum curvature. It will, therefore, be observed that the maximum grade of the Baltimore & Ohio was 10.60 ft. in excess of a 2 per cent grade. This was in the region of the Allegheny Mountains, where the maximum grade of the Baltimore & Ohio still obtains.

When President Lincoln signed the Enabling Act in 1862 he had already been personally familiar with the possibilities of the strategic middle "Overland Route" west from the Missouri river. When attorney for the Illinois Central he traveled over the Hannibal & St. Joseph Railroad (now embraced in the Burlington System), to Saint Joseph, Mo., and from there by boat to Council Bluffs, Iowa, where, on August 13, 1859, he talked with the then Captain Grenville M. Dodge about the latter's surveys through Nebraska and Wyoming. During their talks they stood on an elevation overlooking the Missouri river. The elevation, known as Lincoln Point, is marked by an imposing monument.

Finally, to qualify my statement regarding the geographical location of the driving of the Golden Spike, I quote from a "History of the Union Pacific Railroad," issued by the Union Pacific on the occasion of the celebration at Ogden, Utah, May 10, 1919, in commemoration of the 50th anniversary of the driving of the Golden Spike. On page 40, a telegram to the Associated Press:

"Promontory Summit, Utah, May 10 (1869): The last rail is laid. The last spike is driven. The Pacific Railroad is completed. The point of junction is 1,086 miles west of the Missouri river, and 690 miles east of Sacramento City." The telegram was timed at 2:47 p. m. It was signed by President Leland Stanford of the Central Pacific, by Theodore C. Durant, president of the Union Pacific, and by Sidney Dillon and John Duff, directors.

An impressive dramatic portrayal of our national development, ably directed and well acted, is the motion picture "Union Pacific."

EDWIN SWERGAL.

Railroads-in-War News

Truman Reports Again on Railroad Situation

Latest findings included in third annual report of Committee

Results of the transportation investigations which it has continued to pursue since its December, 1943, report on that subject are set forth in the third annual report of the Senate's Special Committee Investigating the National Defense Problem—the so-called Truman committee. Expedited procedures with respect to the acquisition of new equipment are called for, along with more intensified efforts to conserve present equipment through the reduction in circuitous routing of freight and elimination of reservation practices which militate against further improvement in the Pullman-car load factors.

Equipment Orders Slow—With respect to railroad equipment and facilities, the report expresses the committee's disappointment "at the failure to place orders promptly for equipment and facilities in the quantities that could now be obtained from equipment manufacturers." The committee recognizes the amortization difficulties involved, but nevertheless expresses the view that such difficulties could be resolved, and urges all parties to work to that end.

"This delay," it says, "has been occasioned for purely financial reasons. The railroads assert that their present equipment and facilities are adequate to meet any possible post-war demand for rail freight transportation that they can now foresee and that additions represent wartime expansion which they should be permitted to amortize through certificates of necessity. On the other hand, the War Production Board and the Office of Defense Transportation point to the enormous increase in railroad revenues and the even greater increase in railroad profits that has taken place during the war and object to modernizing the railroads' plant and equipment at the expense of reduced revenues to the United States from taxes.

Making It Harder for RRs—"This situation was made more difficult by a change in policy on October 5, 1943, requiring that certificates of necessity be obtained before finished equipment is delivered, or, in the case of railroads building their own equipment, before the construction is begun. Previous to that time such a certificate could be applied for at any time within six months after the acquisition of the equipment.

"It is important that these difficulties be

worked out quickly. In working them out, the railroads should bear in mind that improvements in other fields of transportation after the war will make it difficult, if not impossible, for the railroads to operate in some important competitive fields with outmoded and worn-out equipment, which shippers will use only when required to by the exigencies of the situation. At the same time, the government agencies must be fair to the railroads and not expect them to buy equipment which they could not usefully employ in their post-war operations, without affording to the railroads the same benefits of tax amortization that have been extended to other war industries in similar circumstances."

Slow Govt. Paper Work—After the foregoing difficulties are resolved, the committee thinks attention should be directed to reducing delays occasioned "by the time consuming operations necessary to obtain government approval" of a certificate of necessity. It cites railroad contentions that "time consumed in passing upon the applications is responsible for some of the delay in their placing orders," adding that both W. P. B. and O. D. T. "admit some delay."

Much of the report's discussion of freight equipment conservation is about a circuitous routing. The committee anticipates an early report on a waybill study of railroad shipments on January 12, 1944, being made in accordance with its recommendation by the O. D. T. and the Interstate Commerce Commission. "The results of this study," says the report, "will provide a factual basis for determining what, if any, regulatory action should be taken to control the practice of circuitous routing."

Meanwhile the report concedes that some circuitry is permissible under I. C. C. fourth-section orders, and it recalls how the committee commended O. D. T. for initiating its program for voluntary reduction of unnecessary transportation "in lieu of zoning orders which might produce damages outweighing their benefits." That idea "was and is sound," the report says, adding, however, that "the progress since the committee's report has not been impressive."

Cars as Warehouses—A note of praise for shippers for their cooperation on heavier loading and expedited release of cars is followed by the suggestion that more could be accomplished along those lines "if the war procurement agencies and the War Food Administration give more vigorous attention to conservation in connection with their own shipments and purchases." The use by government agencies "of refrigerator and box cars for storage places a heavy burden upon the railroads to perform a warehousing and noncarrier function."

(Continued on page 467)

Leave to Pull Off

Commuting Trains

C.N.J. authorized to reduce service to get crews for essential traffic

Acting "to provide train and engine crews to handle the record movement of war freight which is being offered to the railroad," the Office of Defense Transportation last week ordered the Central of New Jersey to discontinue 68 of its suburban commuter trains in the greater New York area, beginning March 12, and to adjust the schedules of certain of its other train operations. The order was sought by the C.N.J., as noted in the *Railway Age* of February 12, page 361.

The O. D. T. announcement pointed out that the action will affect principally commuters in the area of the Jersey City-Newark-Elizabeth triangle; and it was taken "only when it was determined that the passengers on the trains involved would not be unduly inconvenienced and that they could be adequately taken care of on other trains or on buses." Moreover, it was asserted that the order was issued "only after much study of the situation had convinced" O. D. T. officials that "there was no other feasible method of speeding up the movement of high priority freight to the Jersey area."

Shy on Switch Crews—"The critical shortage of train and engine crews," the announcement also said, "is demonstrated by the fact that the Jersey Central is unable to man from five to ten of its switch engines daily in the greater New York area. Moreover, the operation of a large number of suburban trains congests the terminal district and restricts the number of cars of war freight which must be handled in the New Jersey port area."

The order was signed by O. D. T. Deputy Director Charles D. Young, who emphasized in an accompanying statement that it will remain in effect only until the need for it is deemed to exist no longer. "The urgency of the situation has not permitted hearings to be held," General Young said. "However, the order is not to become effective until March 12, 1944, which will permit anyone who feels that undue hardships will ensue, or that beneficial results to the war effort will not occur as anticipated, to make representation to me prior to the effective date."

19,324 Cars Delayed—Describing specifically the situation which brought about issuance of the order, General Young had this to say: "Our investigation indicates the following conditions existed on the lines of the carrier in the area during January and

the first 13 days of February, 1944. Nineteen thousand three hundred twenty-four cars were set off short of terminals due to the inability of the carrier to handle them. Fifty trains were delayed two hours or more due to a shortage of switch crews. Seventy-five trains were delayed two hours or more due to lack of motive power. It was also found that due to the heavy commuter train service afforded by the carrier, eastbound freight trains are not permitted to pass Dunnellen, N. J., on week days between the hours of 6:15 a. m. and 8:15 a. m., and for the same reason no freight trains are operated westbound out of Jersey City yard on week days between the hours of 2:30 p. m. and 6:00 p. m.

Simplifies Truckers' Report

A new and simplified form will be used by motor truck operators required to submit monthly operating reports to the Office of Defense Transportation, it was announced February 26.

As in the past, the monthly operating reports are required only of selective classes of motor carriers of property. The new forms will be mailed monthly to the carriers. These reports are required at present from common carriers of freight, petroleum tank truck operators, and contract carriers in over-the-road service. Operating information requested includes the number of trucks and truck-tractors owned, operated or leased, mileage operated, loads transported, motor fuel consumed, number of truck and truck-tractor work days lost and reasons for days lost.

O. D. T. Appointment

Charles F. Warden has been appointed chief of the Intercity Bus Section of the Division of Local Transport, Office of Defense Transportation. He has been acting chief since last October when Bernard A. Wahle resigned.

O. P. A. Directory

A new Directory of Commodities and Services, containing up-to-date information about Office of Price Administration regulations and a listing of key persons in operating units of the national office of O. P. A., has been issued and is available to interested persons at cost. The directory is designed to aid industry in keeping abreast of price regulations and in making ready contact with O. P. A. organizational units that handle each price control program. Copies of the directory and of six supplements, which will be issued between now and August 1, 1944, may be obtained for \$1 from the Superintendent of Documents, Government Printing Office, Washington 25, D. C.

Included in the manual are: (1) Names and telephone numbers of O. P. A. persons responsible for issuance of price regulations, (2) numbers and titles of all formal price regulations effective through December 1, 1943, and the price branches that issued them, (3) an alphabetical index of commodities and services, along with O. P. A. branch and section and the number of applicable regulation, and (4) a separate alphabetical listing of the products and services assigned to each price branch. Supplements to be issued will include new price

regulations, amendments and revisions to existing regulations and any changes that may occur in O. P. A. organizational structure.

Rail Precedent Gives Truck Drivers "In Lieu" Raise

Citing the recent railway wage adjustments as a precedent, the National War Labor Board last week directed increases of seven cents in the hourly rates and three-tenths of a cent in the mileage rates for 40,000 drivers employed by 2,000 over-the-road trucking companies in the Middle West. The increase, the N. W. L. B. announcement said, "includes the amount due under the 'Little Steel' formula and payment in lieu of overtime and expenses while away from home."

The announcement recalled that the board's unanimous decision was similar to the action of its predecessor, the National Defense Mediation Board, which in January, 1942, awarded increases to these same drivers following the so-called mediation settlement of the 1941 railway wage case.

"This board," the decision said, "is now faced with a situation similar to that. . . . On December 28, 1943, the President awarded an increase of five cents an hour to two operating groups of railroad employees in lieu of (1) overtime after 40 instead of 48 hours per week as therefore, and (2) expenses away from home. This increase was later extended to the three other operating groups. The five cents granted was in addition to an increase of four cents per hour due under the 'Little Steel' formula. On January 18, 1944, the wage dispute involving 15 non-operating groups was settled by an increase of nine to eleven cents per hour. A portion of this increase, varying from four to 10 cents per hour, was granted to eliminate substandard wage rates and to prevent intra-plant inequalities. The balance was given in lieu of overtime."

The opinion then went on to say that it would be "grossly inequitable to ignore altogether the recent change in the railroad wage structure," in the consideration of the wage dispute between the truck operators and the drivers.

To Run Extra Coach Trains from Florida to New York

Because the number of persons in Florida awaiting return rail accommodations "has reached such proportions that emergency action is considered imperative," the Office of Defense Transportation this week authorized the operation of two additional coach trains daily from Florida to New York for a period of 30 days beginning March 1.

The additional trains will carry passengers northbound only, it was emphasized, and no additional southbound service has been authorized. No additional Pullman service will be available as a result of this action, and the coaches that will be provided will not be modern equipment, it was pointed out. Instead, the additional coach accommodations that will be made available have been obtained by borrowing from northern roads such old cars as could be secured, and the exact extent of the space thus afforded had not been determined when the announcement was made. It was

not expected that more than 12 coaches would be available for any one train.

The Rush to Florida—In making this announcement, the O. D. T. warned persons planning trips to Florida that it would be impossible to obtain Pullman space for the return journey, while the few coaches available "will be crowded and uncomfortable." It was stated that "thousands of persons who went to Florida in the mistaken belief that they would be able to make return reservations are now stranded in the southern resort area." In this connection, it has been pointed out also that the condition has been aggravated by attempts of persons who drove their automobiles south to secure rail transportation north, as a result of directions given Florida ration boards not to issue additional gasoline coupons for the return trip by road.

"Pullman space northbound out of Florida continues to be booked solidly ahead for 30 days, the maximum period permitted for advance reservations, and there is at present insufficient coach or bus service to handle the overflow," the O. D. T.'s deputy director, Brig. Gen. Charles D. Young, said. He added that members of the armed services will continue to be given first chance at Pullman space as it becomes available on the trains now operating out of Florida, and he indicated that the demand for Pullman reservations was expected to be greater than the supply at least until mid-summer.

Reach Understanding on Car Interchange with Mexico

The Interstate Commerce Commission on February 26 issued Service Order No. 107-A, suspending until "further order of the commission" Service Order 107 which had restricted the number of American-owned freight cars moving into Mexico in any semi-monthly period to the number moving from Mexico into the United States in the preceding semi-monthly period. At the same time, the Car Service Division of the Association of American Railroads canceled its embargo, CSD No. 323, which had established a permit system with respect to the Mexican interchange.

These developments followed the return to Washington of Director Homer C. King of the commission's Bureau of Service and Chairman Warren C. Kendall of the Car Service Division, who conferred in Mexico City last week with the newly-appointed general manager, Andres Ortiz, and other officers of the National of Mexico, and George S. Messersmith, U. S. ambassador to Mexico, and O. M. Stevens, chief of the American Railroad Mission to Mexico.

Mexican Ry. Efficiency Up—Director King stated that the conferences had been highly satisfactory, resulting in an understanding whereby any further difficulties of the type which brought on the service order are expected to be forestalled. He pointed out that there has been a general increase in the operating efficiency of the National, out of which has come an improvement in the turn-around time of U. S. freight cars entering Mexico. Hence the decision to suspend the service order and cancel the embargo. Meanwhile Messrs.

King and Kendall are reported to have made it plain that the understanding must contemplate continuing improvement in the efficiency with which U. S. cars entering Mexico are used there; and maintenance of the "normal" Mexican-U. S. car balance. Director King expressed confidence this week that the understanding would be carried out and that there would be no further difficulties.

One of Mexico's complaints is understood to have been directed to the refusal of permits under the Car Service Division embargo for the movement into Mexico of certain commodities not considered critical. The present understanding restores the free movement into Mexico of all commodities.

Compares Railroad Performance in Two Wars

Railroad performance in the present war is compared with that of World War I in an article appearing in the March issue of "Domestic Commerce," publication of the United States Department of Commerce. The article was written by N. W. Kendall, of the Transportation Unit, Bureau of Foreign and Domestic Commerce.

Among other comparisons, Mr. Kendall points out that in World War I traffic congestion became so serious that the United States Railroad Administration was set up at the beginning of 1918 and operated the roads for more than two years. "Today," he adds, "the situation is entirely different. Under private ownership and operation the carriers have handled far more traffic than during the last war, and with fewer employees and less rolling stock."

More Than 100,000 Man-Hours Required to Figure Back Pay

More than 100,000 man-hours have already been expended by the Union Pacific in figuring back pay under the terms of the retroactive pay agreement approved on January 17 by the government. The railroad's auditing department at Omaha, Neb., in anticipation of approval of the wage increase, began last September to figure the amounts due employees and since February 21 has distributed 32,000 vouchers. By March 15, 130,000 employees and former employees in the non-operating departments will have received checks totaling more than \$10,500,000 in back pay.

In preparing the vouchers, preference has been given to those for employees serving in the armed forces. Back pay checks have been mailed to nearly every camp in the United States and many to the Army Post Office in New York and San Francisco, Calif.

Drys Get No Comfort from Eastman

Because the volume of alcoholic beverage shipments is "comparatively insignificant," their complete elimination or retention "would not make or break our wartime transportation situation," Director Eastman of the Office of Defense Transportation recently told the House Judiciary Committee which is considering proposed legislation to establish wartime prohibition. The Eastman letter, along with others from Attorney General Biddle, Food Administra-

tor Jones and War Manpower Commission Chairman McNutt, was inserted in the Congressional Record by an opponent of the proposed legislation—Representative Cellar, Democrat of New York, who said the letters had "put the 'drys' in their place."

Confining his comment to the transportation phases of the matter, Mr. Eastman stated that "any substantial reduction in transportation demand, through restrictions upon production or otherwise, is welcome to those who have transportation responsibilities." He went on, however, to refer to studies which showed that in 1942 carload shipments of beverages having an alcoholic content of one per cent or more constituted "less than one-half of one per cent of total carloadings in the United States." A like situation prevailed in the first half of 1943.

Thus Mr. Eastman's conclusion that the matter is not important from a transportation standpoint. He also pointed out that prohibition "might lead to greater production and distribution of beverages of a character not prohibited."

No Extra Service Authorized for Kentucky Derby

A statement February 29 by Brig. Gen. Charles D. Young, acting director of the Office of Defense Transportation, pointed out that, as in 1943, there will be no extra passenger trains to Louisville, Ky., in connection with the running of the Kentucky Derby, and no extra cars will be made available. It was explained that the management of that event had "again drawn plans designed to limit attendance to the Derby to residents of Louisville and vicinity." The event will "not be inconsistent with the travel policies of the O. D. T." in view of these restrictions, the statement added.

In former years, 23 special trains and 276 additional passenger cars have been required to handle the spectators attending this race, the O. D. T. indicated.

A. A. R. Discusses Manpower

A discussion of the railroads' manpower problem at the monthly meeting on February 25 of the board of directors of the Association of American Railroads brought out the information that inductions into military service during the next six months are expected to take about 85,000 more railway employees from their thinning ranks. Already some 230,000 have been inducted, it was said.

On the same day meetings were held in Washington, D. C., looking toward a vigorous recruiting campaign to secure additional workers, in which various government agencies, including the Office of Defense Transportation and the War Manpower Commission, were represented along with spokesmen for the railroads and the railway unions.

The need for such a railroad manpower mobilization campaign was emphasized by reports at the A. A. R. meeting that indicated that the shortage of shop maintenance forces had become particularly critical in various localities, while in recent weeks an average of 40 trains daily had been delayed by lack of road crews to take them out, an average of 70 switch engine tricks had not been worked daily on

account of lack of manpower, and a daily average of 60 crews had been taken from duty while on the road by the operation of the 16-hr. law.

Hope for Some Relief—It developed from the discussions that the railroads do not expect to obtain any blanket deferment of their employees. It was recognized that the armed services have a manpower problem, too. It was felt, however, that a good case had been made out for a "breathing spell" in drafting certain critical classes of employees, particularly, in certain areas of most acute shortages of rail labor. In view of the indications coming from Washington that many types of occupational deferments might be considered by draft boards of less importance has been the case heretofore, however, not too much assurance was expressed that the effect of efforts to obtain such consideration of the railroads' needs would be a big factor in meeting their special problem.

While manpower was the principal topic at the A. A. R. meeting, there was also some discussion of current traffic conditions and of the equipment situation, it was reported. Confidence was expressed that freight car orders would be placed to the capacity of the plants for the remainder of the year, and it was explained that plans were under consideration to make sure that there would be no lag in taking up the freight car allocations scheduled for the fourth quarter of 1944. No new developments were disclosed in passenger car prospects, it appeared, and it still was expected that several hundred cars might be allocated for production near the end of the year, though difficulties in providing certain components, such as air conditioning equipment, still must be overcome, before the passenger car schedules can be well defined.

Truman Reports Again on Railroad Situation

(Continued from page 465)

Another, "and perhaps the most fruitful saving in transportation," says the report "would result from the elimination of wasteful practices engaged in by the railroads themselves for financial reasons." Some circuitous routing, it adds, "has been continued by railroads in order to obtain an advantage in rate participation"; and "solicitation of traffic over unnecessarily longer routes still continues." It is conceded that the railroads have "an absolute right to seek more traffic for themselves and to seek a greater participation in joint traffic"; but "in wartime and when traffic on most railroads approaches capacity it is not desirable that they compete with each other to obtain traffic and handle it in a way that reduces the total capacity of the transportation system."

Pullman Space Not All Used—With respect to passenger travel, the report points out that the installation of the 1,200 troop sleepers and 400 kitchen cars built for troop movements will afford some relief; but "the necessity for passenger travel conservation will still remain." Citing estimates that passenger traffic is now about

26 per cent above the 1943 level, the report goes on to express the committee's concern at finding "that in many instances Pullman space is not fully utilized."

In September, 1943, the Pullman load factor, i.e., the percentage of actual occupancy to maximum possible occupancy was 79.4, which is called "a substantial improvement over the pre-war average," but still "below the load factor of nearly 90 per cent attained by commercial air lines."

Despite the "much discussion" of ticket scalping, the committee accepts the findings of railroad investigations which have developed that the practice is not widespread. "Much more of the loss involved," the report continues, "is due to the purchase of railroad Pullman accommodations which are not required and which are not returned for cancellation in sufficient time to enable them to be purchased by persons who would otherwise use them."

How Sleeper Space Is Wasted—In the latter connection it is asserted that many corporations engaged in the war program "have a standing practice of purchasing space on the theory that it might be needed and that the small loss involved by losing the credit for the cancellation would be unimportant to the corporation." Mention is also made of the practice of reserving blocks of Pullman space for government agencies, in which connection the committee thinks that "much of the traveling done on behalf of such agencies should be eliminated." In any event, it adds, the unused space thus tied up has not been made available for public sale in sufficient time to assure its use.

Meanwhile, the recent change in the War Department's arrangements for reimbursement of traveling and subsistence expenses of officer personnel "may contribute materially to the reduction of unnecessary travel." Heretofore, as the report explains, officers have had the option to be paid at the rate of eight cents per mile for all expenses, buying their own railroad ticket out of that allowance. War Department Circular No. 60, issued February 10, 1944, removes this option and allows a flat \$7 per diem for living expenses and the actual amount of transportation costs. "This," says the report, "should have a tendency to discourage unnecessary and frequent long trips by officer personnel through rendering traveling less profitable and attractive."

Railroads Participate in Red Cross War Fund

Throughout March, 34 railroads will aid the American Red Cross in its 1944 drive for \$200,000,000. Display posters are to be placed in railway stations throughout the country, and thousands of postcards, and gummed stickers for menus will be distributed to travelers in Pullman and dining cars.

Railroads participating in this program are: Atlantic Coast Line; Baltimore & Ohio; Boston & Maine; Chesapeake & Ohio; Chicago & Eastern Illinois; Chicago & Great Western; Chicago, Indianapolis & Louisville; Chicago, Milwaukee, St. Paul & Pacific; Chicago & North Western; Chicago, Rock Island & Pacific; Delaware & Hudson; Delaware, Lackawanna & West-

ern; Denver & Rio Grande Western; Duluth, Missabe & Iron Range; Illinois Central; Lehigh Valley; Louisville & Nashville; Minneapolis, St. Paul & Sault Ste. Marie; Missouri-Kansas-Texas; Missouri Pacific; Nashville, Chattanooga & St. Louis; New York Central; New York, New Haven & Hartford; Nickel Plate; Northern Pacific; Norfolk & Western; Pennsylvania; Seaboard; Southern Pacific; Southern; Texas & Pacific; Union Pacific; Wabash; and Western Pacific.

Big Money for Government in Pacific Export Rate Pact

Government agencies expect to have saved "more than \$72,000,000" in railroad freight charges by the end of 1945 as a result of the agreement reached recently with respect to rates on government traffic moving through Pacific Coast ports for ex-

port. As noted in the *Railway Age* of February 26, page 429, the agreement permits the government agencies to pay the export rates less three cents per 100 lb., without land-grant deductions, or the domestic rates with land-grant deductions—whichever is lower; and it is retroactive to January 1, 1942, except for the three-cent allowance (for wharfage performed by the government) which is retroactive to October 1, 1943.

The estimated saving of \$72,000,000 by the end of 1945 was set out in a February 24 press release issued by the Office of War Information for the War, Navy, and Treasury departments, and the War Food Administration. These agencies estimate the amount of their savings as follows: Procurement Division, Treasury Department, \$28,000,000; Navy Department, \$20,000,000; War Department, \$15,885,146.40; W. F. A., \$8,500,000.

Materials and Prices

The following is a digest of orders and notices that have been issued by the War Production Board and the Office of Price Administration since February 23, and which are of interest to railroads:

Amendment to Direction 5, PR-3—The WPB has issued an amendment to Direction No. 5 of PR 3, which makes changes in phraseology for the purpose of clarification, and prohibits the extension of AA-1 and AA-2 blanket maintenance, repair and operating ratings to secure production materials on the list attached to the direction. Under the earlier direction, a person having a production materials rating could employ it to get materials on the list as maintenance, repair and operating supplies for use only in the production for which the rating was assigned. The amendment omits the former qualification "for use in the production of that product." Acetylene, carbon dioxide, glue, carbon tetrachloride, hydrogen gas, nitrous oxide, oxygen, and trichlorethylene have been removed from the list. New items on the list are muriatic acid, sulfamic acid, Coumarin, magnesium hydroxide, magnesium oxide, pine oil, pine tar oil, gum resin, wood resin, gum turpentine, wood turpentine and vanillin.

Amendment to P-142—A move to reduce paperwork for railroads by establishing a quota basis commencing with the second quarter of 1944, and superseding individual quarterly allotments for materials, has been announced by the WPB. The action is covered in an amendment to PRO P-142 authorizing operators of transportation systems to schedule a majority of materials for the final three quarters of 1944 without the necessity of seeking each quarter's authorization on WPB Form-2585.

However, certain items, designated as "special" under the amendment, will continue to be ordered under a revised WPB Form-2585. These items, all of which are scarce, include steam injectors, mechanical lubricators, roller bearings, stokers, superheaters and headers, air and hand brakes, brake beams, bolster springs and couplers. Operators must file their requirements for these items on the revised WPB Form-2585 not less than 45 days in advance of the beginning of each quarter.

Rail, track accessories, and track material will be handled as in the past. Letter requests covering these items have already been filed for the year 1944 and as new rail authorizations are issued on WPB Form 2585 or by letter, amounts of track accessories and track material will be issued in proportion to the request already filed for such materials. The track accessories and track material for maintenance other than that required to accompany new rail will be issued separately on the basis of requests already filed. "Track accessories," under Controlled Materials Code 2026, now include only joint bars (including insulated joints and compromise joints), tie plates, spikes, and bolts. "Track materials" include the B-products such as frogs, crossings, switches, switch stands, rail anchors, rail braces, guard

rails, guard rail clamps, gage rods, clip bolts, rail clips, and nut locks, which are required for track maintenance. These are to be purchased under money value authorization according to Code 1 of Way and Structures group of WPB Form-2585.

Copper and copper base alloy products produced by a captive foundry owned by an operator or on toll agreement are not covered by Order P-142. Application for authority to secure these products is issued on Form GA-1338 pursuant to application made to the Copper division on WPB Form-2433.

Cast Iron Pipe and Fittings—Cast iron soil pipe and fittings have been freed from all restrictions formerly imposed by General Preference Order M-21 which, prior to its recent amendment, required preference ratings of A-10 or better. However, these products are still subject to L-79, which controls the distributions of plumbing, cooking and heating equipment.

Cotton Duck—To meet essential military requirements, the WPB has directed producers of cotton duck, effective April 1, not to sell or deliver, except on direct contracts or purchase orders from the Army, Navy, Maritime Commission or War Shipping Administration or on specific authorization by the WPB, cotton ducks of the following types: Army duck (including woven awning stripe), single or double filling ducks, shoe duck, ounce duck and enamel duck. It is understood that full details of a permanent allocation plan for cotton duck will be announced shortly.

Equipment Gages—To provide for the standardization and simplification of railroad gages which are specially designed and manufactured for use on locomotives and railway rolling stock, the WPB issued Schedule 8 to Order L-272, on February 10. Railroad gages, affected in the order, are for use on locomotives, railroad rolling stock, subway trains or trolleys. Airbrake gages are included, but gearless crank type movement gages are not.

Galvanized Ware—While galvanized ware requirements for the second quarter of this year are being given serious consideration by WPB, no large-scale relaxation of the controls over production of civilian goods in general can be considered until the outcome of impending military operations is known. A major production factor is the short supply of galvanized sheets; a large part of the sheet rolling capacity is needed for the fabrication of steel plates for ships, tanks, landing barges, and other war goods. Consequently, facilities for rolling galvanized sheets are and will continue to be extremely limited, a representative of the Steel division of the WPB, said.

Heating Accessories—Many simplification and standardization requirements have been eliminated in the manufacture of radiator supply valves, low pressure thermostatic radiator traps, combination float and thermostatic traps and boiler return traps because simplified models have not proved

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satisfactory in all cases. The action was taken in an amendment to L-42, Schedule VIII whose title has been changed to read "Radiator Supply Valves, Thermostatic, Float and Boiler Return Traps", instead of "Vapor and Vacuum Heating Specialties." The amended schedule provides that any copper base alloy used in the production of bodies for radiator supply valves shall be made without the use of any primary copper or tin and shall be of no higher grade than a maximum of 86 per cent copper and 6 per cent tin.

No packless radiator supply valves may be produced with metallic bellows or diaphragms according to the amended schedule, but such valves may be made in any type or pattern; and there are no restrictions as to size. Previously, only one type, the spring-packed radiator supply valve, was permitted for each manufacturer. Former restrictions as to sizes, designs, patterns and types of low pressure thermostatic radiator and drip traps, combination float and thermostatic traps and boiler return traps have been removed, except that the bodies of these items are still required to be made of cast iron.

Lumber—Purchasers and producers of restricted western lumber, southern pine and hardwoods should promptly notify the Lumber and Lumber Products division of the WPB when authorized purchase orders are cancelled or cannot be shipped, the WPB announced on February 9. Civilian purchase orders of western lumber covered by L-290 and of Southern pine and hardwoods, covered by M-361 and M-364 respectively, must be authorized by WPB. Application is made by the prospective purchaser on WPB Form 2720, which should designate the producer who has tentatively accepted the purchase order, subject to WPB authorization.

Frequently, a purchase order is cancelled after application is made because the producer, in the meanwhile, has received better rated orders that must be filled first. Occasionally, through error or misunderstanding, the application has been made out without previously securing the producer's tentative acceptance of the purchase order. As a result, the producer cannot fill the order even though the shipment has been authorized.

In all instances, whatever the reason, where authorized purchase orders are not filled, the applications should be returned promptly to the Lumber division in Washington by the purchaser or the producer for cancellation. Unless this is done, the lumber is charged on WPB records against the purchaser's quota, and subsequent applications may be denied because the amount of lumber received is presumed to be greater than it actually is.

Overhead Cranes—In line with the WPB policy of bringing all scheduling under GSO M-293, revocation of GPO M-225, dealing with overhead traveling cranes, was announced on February 19. Deliveries of such cranes in the future will be scheduled under GSO M-293, under immediate jurisdiction of the WPB Tools division. The order revoking M-225, however, points out that no liabilities that were incurred under it are affected by the action. Overhead traveling cranes, together with rotary, locomotive and gantry cranes, monorail systems for motor driven cranes and carriers, chargers and manipulators, are brought under the jurisdiction of the Tools division by Table 12, as amended February 19, to GSO M-293.

Resistance-Welding Equipment—Applications for the purchase of resistance-welding equipment will continue to be accepted on Form WPB-2752 only until March 15, the WPB announced February 25. After that date all such applications must be submitted on Form WPB-1319. These forms have been valid since February 16, 1944. This action is covered in an amendment to L-298.

Steel Deliveries—A producer of steel in controlled material forms and shapes may accept orders for delivery of his products in excess of amounts that he is ordinarily permitted to accept under WPB regulations if he is able to fill the orders from stocks that are available in his mill, the CMP division of the WPB announced February 24. CMP regulations ordinarily prohibit producers of steel, in controlled material forms and shapes, from accepting orders for their products in excess of 110 per cent of production directives that have been served on them by WPB, or in excess of 105 per cent of anticipated monthly production in the event no production directives have been served. Direction No. 47 to CMP-1, indicates that orders which a producer is permitted to accept under the terms of CMP regulations may be

accepted in excess of these limits if, but only if the producer is able to fill them from items that he has in stock.

Unused Allotments—Rules governing returns of excess or unused allotments of controlled materials have been modified to bring them into conformity with WPB's decentralized operations. The modified rules, which are contained in Direction No. 26 to CMP Regulation No. 1, as amended February 15, pointed out that excess or unused allotments which originated with WPB field offices should be returned to such field offices. The amended direction also points out that excess or unused allotments may be returned by letter if it is impractical for the person returning the allotment to obtain a copy of Form CMP-32, which is the form usually used to make such returns.

WPB Form 1319—In an effort to save paper-work and time in the handling of applications for authorization to purchase or deliver equipment, the WPB has announced the approval of a new and standardized form to take the place of the 20 that previously covered 52 items of equipment. The new WPB Form 1319, will supplant the old variations of WPB Form 1319, as well as many others and will cover the entire field with the exception of those coming under the head of the old PD-1A and PD-3A, which are applications for certain preference ratings.

Prices

Coal—Amendment No. 86 to MPR No. 120 (Bituminous Coal Delivered From Mine or Preparation Plant) effective February 14, authorizes Ohio producers of certain types of coal to sell these coals to railroads at ceiling for commercial fuel instead of at ceilings for railroad fuel. The coals affected are those in size groups 1 through 10 and size group 12 produced at mines located in the Hocking, Pomeroy, Crooksville, Jackson, Middle, Leetonia and the Ohio Middle freight origin districts of Bituminous Coal Producing District No. 4 (Ohio).

These coals have ceilings established for railroad fuel, which are lower than those for commercial fuel. Because of this, coals are being diverted from the railroads. By permitting sales at the higher ceilings established for commercial fuel, a more adequate supply of coal for the railroads will be induced, OPA said. The action has been taken after consultation with the Solid Fuels Administrator for War.

Gray Iron Castings—Amendment No. 7 to MPR-244 (Gray Iron Castings), effective March 1, establishes six changes in the provisions governing maximum prices and is designed to strengthen and clarify the ceilings and aid in their enforcement. The net effect of the changes, OPA said, should be to provide a more stable price structure in the gray iron castings field.

The changes are as follows:

1—Sellers using the "base period" method of computing maximum prices, beginning March 1, are authorized to add overtime labor costs in calculating ceilings. This, OPA said, may result in an increase of two to three per cent in the level of maximum prices. It will, however, tend to stabilize prices, for previously producers were authorized to add overtime labor costs in computing maximum prices under the "formula" and "pre-base" period pricing methods. "The possible increase of ceiling prices will probably be offset wholly or in part by the increased willingness of foundries to produce base-period castings at the present time, and by prevention of the trend to formula work by pattern switching," OPA said.

2—In computing ceiling prices for "short orders" (orders where the shipping weight of the casting multiplied by the quantity ordered does not exceed 200 pounds) the maximum price must be determined by multiplying the shipping weight of the casting by twice the seller's average price per pound for gray iron castings in 1942 and by adding a starting charge of \$8 for non-cored or \$12 for cored castings.

3—Sellers of castings, under the "formula" method, hereafter are permitted to recompute pricing prices only once on any casting sold under that pricing method. Limitation to one recomputation, OPA said, is designed to stabilize ceiling prices removing price uncertainties for both buyers and sellers.

4—In a revision of pricing provisions, any seller of gray iron castings who delivered a casting during the base pricing period August 1, 1941, to February 1, 1942, now must use the "base

period" method of establishing his ceiling price for that casting, no matter whether the contract for the delivery of the casting was made before or after August 1, 1941. Previously it was possible for the seller to use the "formula" method of pricing if the contract was entered into before August 1, 1941.

5—Sellers of castings under the "pre-base" pricing method, once they have chosen to use this method to price castings thirty days after the effective date of the amendment, may not shift over to the "formula" method of pricing.

6—The scope of the "base period" method of computing maximum prices now is narrowed, with the result that more castings will be priced by the "formula" method. In order that a casting may be priced by the "base period" method, the provisions require that the identical casting must have been sold or offered for sale by the seller in the base period. If substantially the same casting was sold or offered for sale in the base period, a maximum price is thereby established only if it was sold or offered for sale to the purchaser to whom the casting is presently being priced.

There are three methods for determining maximum prices for gray iron castings, OPA pointed out; the first, or "base period" method, established maximum prices at the highest prices at which the seller sold the casting between August 1, 1941, and February 1, 1942. The second, or "formula" method, establishes maximum prices for castings not sold or offered for sale during the base period, by use of the seller's pricing formula (including costs, overhead rates) which he employed on February 1, 1942. The third method for determining maximum prices is the "pre-base period" method, and the seller has the option of using this method in lieu of the formula method.

Iron and Steel Scrap—Amendment No. 14 to RPS No. 4 (Iron and Steel Scrap) effective February 19, establishes specific dollars-and-cents differentials which may be applied to the maximum price for No. 1 railroad heavy melting steel scrap by railroads, car manufacturing companies and switching companies to determine their ceilings for 35 listed grades of railroad steel scrap.

The differentials replace a formula method of pricing grades other than No. 1 railroad heavy melting steel scrap, under which ceiling prices were the highest prices individual sellers charged during the base period of September 1, 1940-January 31, 1941.

Northeastern Softwood—Second RMPR No. 219 (Northeastern Softwood Lumber) effective February 17, provides an increase in mill ceiling prices for Ottawa Valley white pine and Ottawa Valley Norway pine lumber that will raise the cost of these species \$4 per M. b. m. to American purchasers. OPA also announced a number of changes in price and pricing procedures on Northeastern softwood lumber which are not expected to bring any change in sales realization by mills. The increase of \$4 is applicable exclusively to the two foregoing softwood species produced in Canada along the Ottawa Valley. The higher ceiling price will increase the cost of the two species to American consumers, because both wholesale and retail distributors base their selling prices on the mill ceiling.

Southern Pine—Amendment No. 1 to Second RMPR No. 19 (Southern Pine Lumber) effective February 26, authorizes producers giving anti-stain treatment to Southern Pine timbers to make the same additions of \$1 and \$2 per M. b. m. to maximum prices for anti-stain spraying as are provided for anti-stain treatment by dipping in a vat.

Yellow Cypress—MPR-513 (Yellow Cypress Lumber), effective February 26, establishes dollars-and-cents ceiling prices which are producer's prices on an f. o. b. basis, and based upon manufacturers' list prices of October, 1941. In effect the new prices are October 1941, prices plus \$6 per M. b. m. and represent increases of from \$3 to \$4 per M. b. m. for producers, and will be passed on to buyers by wholesale and retail distribution yards. Wholesale and retail distribution yard ceilings are producers' prices plus established mark-ups. The new dollars-and-cents prices, OPA said, create uniform ceilings for all sellers of all grades and types of yellow cypress lumber. Previously, it was possible for two sellers in a locality to have prices which varied, according to what prices they were charging in March, 1942, when the lumber was formally put under price control.

GENERAL NEWS

Passenger Fare Tax Will Be 15 Per Cent

Excess profits rate up; new
law requires unions to
file annual returns

Passage of the new tax law last week over the President's veto will result in an increase in the rate of the excise tax applied to passenger fares. The rate will be 15 per cent, instead of 10 per cent now in force. The increase goes into effect April 1, under that provision of the statute which fixes the "first day of the first month which begins more than 10 days after the date of the enactment" of the law as the effective date.

No change in the tax rate on the transportation of property was made in the new revenue act. Parcel post charges were increased slightly, however, with the result that their relationship to express and freight rates which are subject to tax will be maintained. Under the new law the parcel post rates heretofore in effect will be increased by 3 per cent or one cent, whichever is greater, beginning March 26. The domestic air mail postage rate will go up from the present 6 to 8 cents per ounce at the same time.

Labor Unions Must File—Another section of the new law will require labor unions and similar organizations to file annual returns under the income tax provisions, even though their exemption from such taxation continues. This section is retroactive to January 1, 1943. Unions heretofore have not been required to make income tax returns, but they now must "file an annual return, which shall contain or be verified by a written declaration that it is made under the penalties of perjury, stating specifically the items of gross income, receipts, and disbursements, and such other information . . . as the Commissioner [of Internal Revenue] . . . may by regulations prescribe." Moreover, the statute now provides that unions and similar organizations "shall keep such records, render under oath such statements, make such other returns, and comply with such rules and regulations as the commissioner . . . may from time to time prescribe."

Social security tax rates now in effect are "frozen" at their present levels, and railroad retirement and unemployment insurance taxes remain unaffected. The excess profits tax rate applicable to corporations has been increased to 95 per cent; it was 90 per cent previously. The 5 per cent credit rate on invested capital over \$200 million allowed for excess profits tax purposes remains unchanged, the House provision to reduce it to 4 per cent having been

eliminated in conference before the bill was passed.

No Relief for Undermaintenance—

The new law does not provide tax relief provisions sought by the railroads (as reported in *Railway Age* of November 27, 1943, page 874) with respect to deferred maintenance reserves, inclusion of losses on certain securities of other carriers for capital gains tax purposes, or possible land-grant rate refunds.

Charges on federal government freight will no longer be exempt from the tax on transportation of property under the new law, though the exemption will still apply to freight charges paid by states and their political subdivisions. The exemption heretofore enjoyed by the federal government from the tax on transportation of persons likewise is removed by the new law. These changes will become effective June 1.

Safety Contest Winner

First place among the railroad's major regional units, in the Pennsylvania's 18th annual safety contest, has been accorded the Western region, with headquarters in Chicago. This group had the best general showing in all departments in 1943.

The Altoona (Pa.) Works was awarded first place among the major regional groups for the best showing in the maintenance of equipment department, the only department in which it competes.

Among general divisions, the units next in size, the best record was that of the Northern division's, with headquarters in Buffalo. In the superintendent's division—primary operating units of the System—the Long Island was winner in Group A (those of largest size); first in Group B (those of intermediate size), was the Indianapolis Division; and in Group C (the smaller divisions), the Wilkes-Barre division won top place.

Awards are based on the lowest number of accidents, in proportion to total hours worked.

Jeffers and Davenport to Address Western Railway Club

W. M. Jeffers, president of the Union Pacific, and J. E. Davenport, vice-president of engineering, development and research of the American Locomotive Company, will be the guest speakers at meetings of the Western Railway Club on March 20 and April 17, respectively.

Chicago Central Zone Wins Pullman Safety Contest

The Chicago Central zone of the Pullman Company was the winner of the company's 1943 safety contest with an accident frequency rate of 3.17 per million hours for the 17,374,176 hours worked.

Operating Expenses Taxed as "Profits"

Charges to depreciation and
obsolescence not deemed
adequate by P.R.R.

The railroads are not only justified—but should be required by sound public policy to accumulate large reserves to care for post-war changes in transportation practices and methods. Instead of that, "the government is heading them along the same unfortunate path as at the close of the last war," when the carriers had to "borrow large sums of money and go into debt to revamp their properties." So declares Martin W. Clement, president of the Pennsylvania, in the company's ninety-seventh annual report to stockholders.

Moreover, the report continues, the railroads have not, like other industries, been in a position in recent years "to carry adequate charges for depreciation and obsolescence-amortization; and income which should properly be charged off for these purposes is subject to the excess profits tax."

Cramping Post-War Change-Over—

The report goes on to state that, because of inordinately low earnings in 1936-39—the "test period" under the excess profits tax—the railroads have had no alternative except to select the "invested capital base" for computation of their taxes; and this method does not permit them before the imposition of confiscatory taxes "to provide for necessary charges and a reasonable return on invested capital, wholly aside from the question of retaining capital funds with which to maintain and modernize their plant."

The Pennsylvania's operating revenues were \$980 millions in 1943—an increase of \$141 millions—but, because of greatly increased taxes, net railway operating income (\$128 millions) was \$18 millions less than in 1942. After the payment of interest charges, maturing debt, and 5 per cent dividends on capital stock, \$33 millions were transferred to credit of profit and loss, a decrease of \$2 millions under 1942. Taxes totaled \$180 millions.

Debt Reduction—Net reduction in the debt of the railroad and affiliated companies during 1943 was \$33 millions—and \$122 millions in the past five years. The railroad's own debt, matured and paid during the year, was \$17 millions—this being partially offset by \$12 millions in new obligations (equipment trusts). Leased line maturities paid totaled \$28 millions—but, of the \$45 millions of system debt reduction

(Continued on page 477)

Expenditure Modest For RR Advertising

Outlay as ratio of revenue
much lower than in many
other industries

Among 502 companies in the United States that each spent more than \$100,000 for advertising in magazines, farm-papers and network radio during 1943 were only 11 railroads and 3 allied agencies, according to figures compiled by Publishers' Information Bureau, Inc., New York. These 502 companies spent \$343,159,229 for advertising in these media in 1943, the study reveals, of which amount the 8 railroads, the Chicago, Topeka & Santa Fe; the Chicago, Milwaukee, St. Paul & Pacific; the Erie; the New York Central; the Northern Pacific; the Pennsylvania; the Southern Pacific; and the Union Pacific spent \$1,799,833. In addition, the Association of American Railroads spent \$705,810; the Pullman Company, \$451,325; and Railway Express Agency, \$282,850, which brought the total for the railroad industry mentioned in the study to \$3,239,268. Three airlines and their association spent \$1,342,268.

What Some Companies Spend—Among the larger industrial advertisers, the Procter & Gamble Company spent \$15,509,236; the General Foods Corporation, \$11,509,806; the General Motors Corporation, \$10,800,409; Sterling Drug, Inc., \$8,751,903; Lever Brothers Company, \$8,443,107; General Mills, Inc., \$7,454,223; R. J. Reynolds Tobacco Company \$6,311,530; Liggett & Myers Tobacco Company, \$5,856,589; American Home Products, \$5,732,992; American Tobacco Company, \$5,653,176; Colgate-Palmolive-Peet Company, \$5,290,833; General Electric Company, \$5,103,145; Coca-Cola Company, \$5,037,143; Bristol-Myers Company, \$4,367,021; Miles Laboratories, Inc., \$4,070,473; Schenley Distillers Corporation, \$3,761,317; Philip Morris & Company, Ltd., \$3,707,658; Kellogg Company \$3,560,814; Standard Brands, Inc., \$3,519,728; Distillers Corporation-Seagrams, Ltd., \$3,462,042; and Jergens-Woodbury, \$3,291,495.

In considering the amount spent per dollar of sales by industries, the Distillers Corporation-Seagrams, Ltd., spent \$3,462,042 in these media in 1943, on sales of \$86,866,130, or 4 cents per dollar. American Home Products (cosmetics, medicines, etc.) spent \$1,042,902 on sales of \$62,165,843, or 1.7 cents per dollar. Liggett & Myers Tobacco Company spent 1 cent per dollar of sales. Wm. Wrigley, Jr. Company spent 1 cent per dollar.

Outlay by Roads—In contrast, even the larger railway advertisers enumerated, devoted far smaller proportions of their gross earnings to advertising. The Santa Fe spent \$148,722, of operating revenues of \$71,119,015, or 0.03 cents per dollar. The Chicago, Milwaukee, St. Paul & Pacific spent \$161,483 of operating revenues of \$24,515,240, or 0.07 cents per dollar. The Erie spent \$136,250 of operating revenues of \$157,893,223, or 0.08 cents per dollar. The New York Central spent \$239,370 of

\$740,933,875 of operating revenues, or 0.03 cents per dollar. The Northern Pacific spent \$154,002 of operating revenues of \$151,531,731, or 0.1 cents per dollar. The Pennsylvania spent \$438,894 of \$1,022,750,883 of operating revenues, or 0.03 cents per dollar. The Southern Pacific spent \$208,419 of \$597,373,271 of operating revenues, or 0.035 cents per dollar; Union Pacific spent \$312,143 of \$480,274,934 of operating revenues or 0.065 cents per dollar.

In spite of these low ratios, the \$3,239,268 spent by the 11 railroad organizations in 1943 was larger than in any of the previous three years, when the totals were \$2,064,387 in 1942; \$1,962,927 in 1941; and \$1,388,445 in 1940. The total for the airlines in 1943 likewise showed an increase over that of any of the previous three years, when the amounts were \$656,764 in 1942; \$802,178 in 1941; and \$765,021 in 1940.

Of the \$3,239,268 spent by the 11 railroad organizations in 1943, \$3,030,433 was expended in magazine advertising. (The study covered 106 magazines.) Farm-paper expenditures by the 11 railroad organizations aggregated \$208,835. (Eleven national and 31 state farm publications were reviewed in the study.) None of the 11 railroad organizations used Columbia, National, Blue or Mutual radio networks in the four years studied.

Mechanical-Defect Accidents

The Interstate Commerce Commission's Bureau of Motor Carriers has made public an analysis of mechanical defect accidents of passenger- and property-carrying vehicles and combinations in 1942. It was prepared under the general supervision of G. R. Wellington, chief of the Bureau's Section of Safety, by Karl F. Walker, mechanical engineer of the Section.

As pointed out in Bureau Director W. Y. Blanning's letter of transmittal to the commission's Division 5, the report presents an analysis of 619 accidents. Director Blanning expressed his hope that it "will focus increased attention upon the problem of better inspection and maintenance practices by carriers to the end that the number of accidents traceable to these causes will be reduced in number and severity."

Division 5 authorized release of the report, but "it is not to be construed as an official expression of the views of the commission."

Fines for Elkins Act Violation

Secretary W. P. Bartel of the Interstate Commerce Commission has disclosed that the commission has been notified that three railroads have been fined by the federal district court at Grand Rapids, Mich., after *nolo contendere* pleas to informations charging Elkins Act violations. The charges were that the roads had failed to assess tariff refrigeration charges on certain carload shipments of fresh vegetables originating in Michigan and consigned to Green Bay, Wis. The shippers at the same time were charged with failing to declare the icing of the shipments in question. The Pere Marquette was fined \$3,000 on three counts, the New York Central and the Pennsylvania each \$1,500 on one count. The remaining counts, 17 in the case of the Pere Marquette and 9 each in the other two instances, were dismissed.

Find Signal Layout Permitted Collision

Neither of opposing trains got
both an approach and a
stop indication

An "inadequate block signal system" contributed to a head end collision near Willard, Utah, on December 21, 1943, on the single track Union Pacific line between Ogden, Utah, and McCammon, Idaho, according to the report of an Interstate Commerce Commission investigation directed by Chairman Patterson.

The trains involved were Extra 2531, an Ogden-bound freight, eastbound by timetable direction, which was made up of 47 cars and caboose, and westbound Extra B-28, a motor car used by the signal maintaining force. Both trains had received a train order which authorized Extra 2531 to proceed east from Willard at or after 9:12 a.m., and under the road's rules Extra B-28 was required to clear the time of that train by at least 5 min., or to furnish flag protection.

Flagging Requirements—At the time the motor car departed from the next passing point east of Willard its pilot-conductor, who was the only train service crew member, had expected to be able to be into clear at Willard by 9:07 a.m. In addition, he had information that Extra 2531 was running 5 min. later than the time specified in the order. The motor car was delayed by a heavy fog and by three stops made to change signal batteries, however, with the result that at 9:07 a.m. it was about 1½ miles east of Willard.

While the conductor was then required by rule to furnish flag protection against the eastbound train, he allowed the motor car to continue toward Willard, as he did not think it advisable to stop for that purpose and so leave the rear of his train unprotected against an overdue following train, as he thought would be necessary under the circumstances. (The report pointed out, however, that the motor car operator and one of the signalmen were qualified to provide rear end flag protection.) Moreover, the report added, he was depending on an automatic block signal to hold the eastbound train at Willard, "although this signal was 671 ft. east of the east siding switch," by which the motor car would have gone into clear.

The report remarked that, "if flag protection had been provided after it was learned that Extra B-28 could not clear for Extra 2531 at Willard in the manner provided by the rules, this accident would have been averted." Nevertheless, it went on to show, the automatic block signal system at this location "was in violation of" the commission's 1939 order requiring that, "on track signaled for movements in both directions, signals shall be so arranged and controlled that proper restrictive indications will be provided to protect both following and opposing movements."

Home and Distant Signals—The specific finding in the report was that "neither train in this instance received

both an approach and a stop indication." Due to heavy fog, visibility was restricted to about 400 ft., and a rule required that in foggy weather trains approach signals "with great care," prepared to stop short of any home signal regardless of the indication of the preceding signal. Nevertheless, the report pointed out, when a train received a clear indication from one signal, it was authorized to move at the authorized speed of 40 m.p.h. to the next signal.

In the vicinity of Willard, eastbound movements were governed by approach signal 154 and home signals 148 and 138, located, respectively, 8,628, 5,991 and 761 ft. west of the point of the accident. Westbound movements were governed by intermediate home signal 121, approach signal 135, and home signal 139, located, respectively, 8,518 and 1,220 ft. east and 761 ft. west of the point of the accident. Signals 138 and 139 were located at the same point. These signals were of the one-arm, two-position, lower quadrant, semaphore type, approach lighted. Home signals displayed either horizontal-red (stop) or 60 deg.-green (proceed), and approach signals displayed either horizontal-yellow (proceed at not more than 30 m.p.h., preparing to stop at next signal) or proceed.

The signal system was arranged on the overlap principle, so that an eastbound train would receive a stop indication from signal 138 when the opposing westbound train was 11,876 ft. to the east, but the next signal to the west (No. 148) would indicate proceed until the opposing train had reached a point 4,792 ft. east of signal 138, when its indication would change to stop. An eastbound train would cause signal 135 to display approach and signal 139 to display stop when it reached a point 7,867 ft. west of the latter signal, but signal 121 would display proceed until the eastbound train reached signal 138.

Collision at 30 M. P. H.—Under the circumstances leading to the accident in this case, Extra B-28 received a clear indication from signal 121 and an approach indication from signal 135. This authorized it to proceed to signal 139 at a speed of 30 m.p.h., preparing to stop. Extra 2531 received a clear indication from signal 148, which authorized it to proceed at 40 m.p.h. to signal 138, which was at the same point as signal 139 governing the opposing train. The engineer on Extra 2531 said the semaphore arm of signal 138 was in the proceed position when he observed it, but was uncertain as to the light indication. The front brakeman on that engine, whose railroad experience was about 2 months, was somewhat confused as to the locations, but apparently observed a red light indication at that signal. The collision occurred 761 ft. east of that signal. The motor car was stopped by a brake application when the opposing train was observed, but Extra 2531 was moving about 30 m.p.h. when at 9:16 a.m. it struck the motor car, demolishing it, as there was not enough time for the brakes to become effective after the motor car was seen.

In this connection, the report pointed out that proper signal indications were observed from the train following B-28, showing that the motor car did shunt track circuits as intended. It was found, however,

that this 4-wheel, 12-ft. wheelbase car could be so spotted between the staggered insulated joints at ends of track circuits that neither circuit would be shunted. "Because of this condition, and also because of the liability of loss of shunt at times when a small lightweight car of this type is operated over the line," the commission added, "it is not safe to depend upon automatic block signals for protection of such movements, and absolute manual block protection should be provided."

Air Service Would Have Proper Place in Post-War Victoria

"Many existing and new interests will seek to re-establish competition with the railways after the war, both by road and by air," states the Victorian Railways' annual report for the year ended June 30, 1943, and it is suggested that "capital may be made" of certain inconveniences encountered by railway travelers during the war period. As the report sees it, there is a "danger" that any shortcomings of

present railway service may come to be taken as "typical."

There is emphasized the need for preventing the "development afresh of unregulated and destructive competition." It is not the view of the railways' commissioners that either road or air services be retarded, but rather that post-war policies should be directed towards defining the proper economic sphere of each means of transport, thereby preventing "undesirable duplication and expenditures disproportionate to benefits derived."

Present competition by road, however, is fractional to that of former years, due to government measures to conserve gasoline and motor accessories, and it is remarked that most road services engaged in long-distance routes have ceased entirely.

There is expressed the view that railway improvement works should figure prominently in post-war reconstruction. Foremost in its proposed program is the unification of gages. Other important items are listed as follows: Replacement of obsolete or worn-out locomotives, and other rolling

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Baldwin's President Ralph Kelly Inspects 70,000th Locomotive Built by Baldwin

During the 112 years since Matthias Baldwin built his first locomotive, Baldwin Works has averaged one completed locomotive every 14 hours. The one above was built for the Army. To the left of Mr. Kelly are W. H. Holcomb, vice-president, industrial relations, and W. G. Stetson, general foreman of the erection shop.

come to the block, modernization of workshops, bridge renewals, and improvements in metropolitan passenger transport facilities.

Due to the manpower shortage and the abnormal traffic there is growing need, too, for repair and painting of stations, renewal of ties, and track maintenance generally. But despite such difficulties, observes the report, safety standards have not been impaired. An outgrowth of the manpower shortage is a heavy accumulation of annual vacations, and a reserve is now being created to meet this commitment, since such arrears will have to be met either by payment or the engagement of extra staff.

Justifying the Renewals and Replacements Fund, which now totals £1,800,000, the report explains that if the cost of these works is not to be a burden to railway and State finance in later years, "it is clear that provision should be made for a substantial portion of it now, when railway finance is buoyant."

Union Pacific Issues Victory Garden Guide

In the interest of increased food production on the home front, the Agricultural Development department of the Union Pacific has published and has just released 75,000 copies of a Union Pacific Employees Victory Garden guide for use by the railroad's employees. The book is a consolidation of the garden publications of the 11 Western states' college extension departments.

In a foreword, W. M. Jeffers, president of the railroad, who recently accepted the chairmanship of the Industrial Advisory Garden committee of the National Victory Garden Institute, writes:

"Food production by victory gardeners throughout the country has a vital bearing in helping to solve the nation's food problem. Union Pacific employees are urged to participate by growing a victory garden, and, thereby, effectively supporting not only our men in the battle line but also men and women working on the home front."

Included with the distribution of the book is a questionnaire to all employees, which will advise the company of the size and location of each employee's garden and an attractive red, white and blue victory garden sticker for use on home or automobile windows.

Urges Further Improvement in Classification

The Commonwealth of Kentucky and its Public Service Commission, through L. F. Orr of counsel, have filed exceptions with the Interstate Commerce Commission on the proposed report recommending uniform classification of freight (I. C. C. Docket 28310). The statement agrees with the purpose of the report but contends that it "does not make all of the findings that may be justified by law and the evidence."

The Kentucky people assert that long-haul truck traffic "could be loaded into the empty space of the railroad cars already moving partially loaded"—and blames "this unnecessary duplication of facilities and uneconomic diffusion of traffic" on the railroads' outmoded pricing theories, based upon a monopoly which no longer exists."

"Railroad transportation service has no more value to industry than the minimum cost its equivalent may be produced or acquired. Because of the opportunity to employ trucks, decentralize, and substitute, the service value element can have but little influence on the measure of the rate.

"Outside of a few bulky and fragile articles, and a few low valued and heavy density articles, the transportation characteristics, such as the ability to load compactly, volume and other elements which affect the cost of producing the service are the only reliable guide. The dissimilarities have been reduced to where at least half of the classes are a burden and only serve to lose business for the railroads or take advantage of the general public and small shippers."

The Kentuckians conclude that:

(a) The railroads should be required to unify and consolidate the classification into not more than sixteen classes [8 c. l., 81 c. l.] to apply uniformly on all railroads.

(b) There should be one base class for carloads and one base class for less than carloads.

(c) Exceptional classes should be established for bulky, fragile, and other articles susceptible to unusual damage, or damaging other shipments, to compensate for unusual service and liability.

(d) Exceptional classes should be established for lower valued, heavy density articles.

(e) The total classes should not exceed eight classes for carload and eight classes for less than carloads.

(f) These classifications should be designed to fit a rate structure that will reflect the inherent advantages of rail transportation.

(g) Quantity discounts should be given on both carload and less carload, so designed to encourage greater and more efficient utilization of manpower and equipment.

(h) All low-grade, heavy density traffic, so individual in its nature that it will not fit into this eight class scheme, should be given special commodity rates, either group or mileage scale, whichever is the most suitable.

New England Commutation Fare Case Discontinued

Acting favorably upon the recently-filed petition of interested railroads, the Interstate Commerce Commission has discontinued the No. 28972 proceeding involving interstate commutation fares in New England.

R. L. Groover Replaces Eastman as A. R. E. A. Speaker

Owing to the illness of Joseph B. Eastman, who was scheduled to address the annual luncheon of the A. R. E. A. during its annual meeting on March 15, arrangements have been made with R. L. Groover, associate director, Ways and Structures, of the O. D. T., and formerly principal assistant engineer of the Atlantic Coast Line, to represent Mr. Eastman as the speaker on this occasion. The complete program for this meeting was published in the *Railway Age* of February 26, pages 438-439.

Union Pacific Shops Win National Security Award

The Union Pacific shops at Ogden, Utah, and at Salt Lake City have been granted the National Security Award by the Office of Civilian Defense for superior achievement in plant security organization. The award was established by O. C. D. to give public recognition to plants and facilities that have achieved outstanding programs of protection of their plant struc-

tures, personnel, and production processes against air raids, fires, sabotage, explosions and similar hazards. To qualify for the award, plants must not only establish an outstanding security and protection organization within the plant, but must also integrate their plant organization with the Civilian Defense protection units of the whole community.

Says Block System Would Have Prevented Collision

A recommendation that the Gulf, Colorado & Santa Fe establish "an adequate block system" on its single track line from Brownwood, Tex., to Sweetwater was incorporated in the report of an investigation by the Interstate Commerce Commission of a rear end collision at Novice, Tex., on January 13. Two passenger trains were involved, and 7 passengers were killed and 82 passengers and 23 employees were injured.

The accident occurred about 12:52 p. m. The second section of the "California Special," southbound, consisting of a locomotive, one box car, two head-end passenger train cars, five coaches, a diner, two pullman sleeping cars and a business car, had stopped about 1 min. previously at the station at Novice. It was struck by southbound passenger extra No. 1279, which was moving about 30 m.p.h. The standing train was driven ahead about 40 ft. by the impact, and its ninth car, a steel diner, telescoped the rear end of the steel-underframe coach ahead of it about 25 ft., thus causing the fatalities. The engine of No. 1279 was derailed and badly damaged, but the rest of that train, made up of three tourist sleeping cars and a baggage car, remained on the track. The front end of the first of these tourist sleepers was badly damaged, while the rear end of the business car at the rear of the standing train was crushed inward about 8 ft.

Time Interval 10 Min.—According to the report prepared under the supervision of Chairman Patterson, the accident was caused by failure of the railroad "to provide adequate safeguards for the movement of trains." On this line trains were operated by timetable and train orders only, and the rules required that a train following a passenger train be spaced at least 10 min. behind the preceding train. In this case, the report pointed out, the preceding train passed the last open office, which was 18.4 miles north of Novice, 10 min. ahead of the following train. Unless the following train received flagging signals, it went on to say, there was no restriction to prevent it from moving at the maximum authorized speed of 70 m.p.h. until it reached the next open office, which was 12.9 miles beyond Novice.

As required by regulations, the flagman of Second No. 75 was stationed on the rear platform of the car ahead of the business car on that train. At a point about 2,200 ft. north of the point of the collision he dropped a lighted 10 min. fusee on the track. At the time, however, falling snow restricted visibility to about 800 ft., and it was demonstrated that the flare of this fusee probably could not have been seen from the following train, as it had fallen into snow 8 to 10 in. deep. At any rate the burning fusee was not observed by the enginemen on Extra

1279, and its approach about 800 ft. distant was observed by the flagman on Second 75 before that train came to a stop. He immediately alighted to give flagging signals, but fell in the snow, and the collision occurred directly thereafter. The following train was moving at about 35 m.p.h. when the rear end of the preceding train was seen about 800 ft. ahead. The engineman moved the brake valve to emergency position as soon as a warning was called by the fireman, and the speed was reduced somewhat when the accident occurred.

5-Min. Fusees—In commenting upon the circumstances of the collision, the commission's report pointed out that, "although the rules applicable to this case required that a 10-min. interval be maintained between these trains, the carrier furnished only 5-min. fusees. However, the flagman of the preceding train used 10-min. fusees, which he had obtained from another source." Continuing, it explained that the road's rules provide for manual block operation, but they were not in effect on this line. Under such rules the following passenger train would not have been permitted to enter an occupied block, the report added, "and this accident would not have occurred."

During the 30-day period preceding the collision, the average daily movement in this territory was 11.26 trains, the report stated.

Hearing on Spotting Charge Bill

A subcommittee of the Senate committee on interstate commerce will hold public hearings March 8 on S.1492, the bill introduced by Senator Brooks, Republican of Illinois, to provide that "the established railroad freight rates cover the receipt and delivery of loaded cars at the points of loading and unloading." The Interstate Commerce Commission's legislative committee has submitted an adverse report on the bill, as noted in the *Railway Age* of December 11, 1943, page 947.

Vessel Added to Pennsylvania's Chesapeake Bay Ferry Service

The 2,906-ton steamship "Elisha Lee" will be placed in service by the Pennsylvania during the first week in March to provide additional traveling facilities across Chesapeake Bay between Cape Charles, Old Point Comfort and Norfolk.

The vessel, the former "Richard Peck" has been chartered from the War Shipping Administration and named for the late vice-president of the Pennsylvania. Two round trips daily will be made between Cape Charles, Old Point Comfort and Norfolk, connecting with the Pennsylvania's Delmarva division at Cape Charles for Wilmington, Philadelphia, New York and the West.

The "Elisha Lee" is slightly larger and faster than the "Virginia Lee" which was used in cross-bay service until requisitioned by the government in July, 1942. Since then the traffic has been handled with the steamer "Delmarva", leased from the Virginia Ferry Corporation, and the smaller ship "Maryland" which has not been sufficient to carry the travel. The "Maryland" now will be used as an auxiliary and for any future expansion of the service.

The vessel added to the service has a capacity of 1,320 passengers in its saloons, a dining room seating 120, and a marine grill accommodating 50. There are 16 state-rooms. Automobiles, freight, express, mail and baggage will be carried.

Named to A. S. M. E. Committee

E. R. Battley, chief of motive power and car equipment, Canadian National, at Montreal, has been appointed a member of the Technical Committee on Locomotives (Railroad Division), American Society of Mechanical Engineers. The committee consists of 10 members of outstanding attainment, and Mr. Battley, for more than 40 years with the mechanical department of the C. N. R., is regarded as one of Canada's authorities on railway motive power.

Would Let Santa Fe Purchase 1,000 Miles of Truck Routes

Examiner Frank A. Clifford has recommended in a proposed report that the Interstate Commerce Commission conditionally approve applications of the Santa Fe Trail Transportation, subsidiary of the Atchison, Topeka & Santa Fe, for authority to acquire additional highway routes which would extend its present truck operations over another 1,000 miles. The proposed report in the No. MC-F-2198 proceeding embraces also No. MC-F-2289.

The routes involved are those of the Los Angeles-Albuquerque Express of Los Angeles, Calif., which the railroad subsidiary would purchase for \$275,000, and those of the Hall Motor Freight Company of Denver, Colo., which would be acquired for \$121,906 less an allowance for depreciation. While there are other operating rights involved, the regular-route and general-commodity rights of Los Angeles-Albuquerque and Hall "join at Pueblo, Colo., and provide a continuous route between Los Angeles and Ottawa, Kans., roughly 1,600 miles." The net extension of Santa Fe routes by only 1,000 miles, as noted above, would be due to the fact that it already has rights on about 675 miles of the routes to be acquired.

Long-haul, all-truck service by the railroad affiliate would be prohibited by the principal condition which the examiner would have the commission attach to its approval of the application. He would impose the so-called "key point" condition, setting up 15 such points between and through which truck service would not be permitted.

Says Private Initiative Gave U. S. Enterprising Railroads

American railroads afford an example of how the individual, "the chance-taking, profit-seeking individual," has been "the source and mainspring of American achievement," said J. J. Pelley, president of the Association of American Railroads in a February 26 radio address on the Columbia Broadcasting System's "Victory F. O. B." program.

"Everyone," said Mr. Pelley, "recognizes that the mass transportation of railroads is responsible in large measure for the agricultural, industrial and commercial growth and development of the country. . . . Cer-

tainly, without the tremendous transportation tasks the railroads are performing today, victory for us and our allies would be beyond the range of possibility.

"But back of the railroads, responsible for what they do, responsible for their very existence, is the individual—the individual inventor and organizer, the individual investor, the individual railroad man. Our railroads are the product of private capital. As the railroads stand today, 98 per cent of the investment in them—in their roadbeds as well as in their rolling stock—private capital.

"Our railroads are a product of private planning. The plans for the vast network of rails that stretches out into every section of the land were formulated and carried out by groups of individuals. The same is true of the plans started 20 years ago to meet such transportation emergencies as the one which exists today. It is largely as a result of this organized private planning of railroads and shippers that the railroads have been able to handle a load twice as great as in the last war, with one-third less equipment and 500,000 fewer men than it took then—and to do a better job besides."

Pettengill Resigns from Transportation Association

Samuel B. Pettengill, vice-president and general counsel of the Transportation Association of America, has resigned to "re-enter other fields of activity." Since his retirement from Congress, where he served four terms as representative from Indiana, he has practiced law in South Bend, Ind. He was elected vice-president and general counsel of the Transportation Association on January 1, 1943.

Another House Bill for Survey of Air Transport Facilities

Representative Randolph, Democrat of West Virginia, has introduced H.R. 425 which would direct the Secretary of Commerce, acting through the Administrator of Civil Aeronautics, to make "a survey of the need for a system of airports and landing areas throughout the United States." Mr. Randolph had previously introduced similar bill—H. R. 3411.

Dominion Brotherhoods Urge Transport Legislation

The joint legislative committee of six railway unions (B. of R. T., B. of L. F., E., O. R. C., O. R. T., B. of L. E., Brotherhood of M. of W. Employees) in Canada have asked the Dominion government to consider early adoption of a national transportation policy at the proposed Dominion-provincial conference, at Easter. In its annual brief, prepared for presentation to Prime Minister Mackenzie King and members of the cabinet, the brotherhoods urge "more orderly regulation of all forms of transportation."

Specific suggestions include the adoption of a health insurance program, providing on a broad scale for medical, dental and hospital care; an appropriation of at least \$2,000,000 to assist individuals and organizations in scientific medical research; rapid advancement of the government's plans for social security; an amendment to the in-

come tax regulations, allowing railwaymen exemption on away-from-home meal and lodging expenses (this being at present restricted to those paid on the mileage basis); and a recommendation that persons, whose income comprised payments from superannuation or pension fund, be exempt from taxation up to \$100 a month. The brief also asked for an active drive to eliminate grade crossings, with an appropriation of at least \$1,000,000.

Freight Car Loading

Loadings of revenue freight for the week ended February 26 totaled 782,463 cars, the Association of American Railroads announced on March 2. This was an increase of 6,771 cars, or 0.9 per cent above the preceding week, a decrease of 458 cars, or 0.1 per cent below the corresponding week last year and an increase of 604 cars, or 0.1 per cent above the comparable 1942 week. Loading of revenue freight for the week ended February 19 totaled 775,692 cars, and the summary for that week, as compiled by the Car Service Division, A. A. R., follows:

Revenue Freight Car Loading

For the Week Ended Saturday, February 19			
District	1944	1943	1942
Eastern	154,793	142,654	165,006
Allegheny	174,096	156,582	174,593
Peachontas	53,674	54,659	48,878
Southern	117,598	122,542	120,761
Northwestern	86,697	83,481	92,331
Central Western	120,272	118,207	114,448
Southwestern	68,562	73,894	58,403
Total Western Districts	275,531	275,582	265,182
Total All Roads	775,692	752,019	774,420
Commodities			
Grain and grain products	50,743	51,603	36,087
Lumber and wood products	15,154	13,179	9,940
Coal	179,807	173,452	158,679
Oil	15,221	14,292	14,490
Forest products	40,589	41,139	44,892
Other	13,119	11,097	13,032
Merchandise l.c.l.	100,635	90,299	150,012
Miscellaneous	360,424	356,958	347,288
February 19	775,692	752,019	774,420
February 12	795,262	765,271	782,701
February 5	806,075	755,514	783,962
January 29	811,062	734,670	815,565
January 22	798,722	703,294	818,081
Cumulative Total, 8 Weeks	6,173,506	5,804,615	6,199,562

In Canada.—Carloadings for the week ended February 19 totaled 65,623, compared with 66,771 cars for the previous week and 59,275 for the corresponding period last year, according to the compilation of the Dominion Bureau of Statistics.

Total for Canada		Total Cars Loaded	Total Cars Rec'd from Connections
February 19, 1944	....	65,623	38,974
February 12, 1944	....	66,738	38,077
February 5, 1944	....	67,802	39,272
February 20, 1943	....	59,275	37,148
Cumulative Totals for Canada			
February 19, 1944	....	470,063	267,497
February 20, 1943	....	409,109	251,566
February 21, 1942	....	432,322	221,156

Carrier Must Deal with Unions, Not with Individuals

By an opinion of the Supreme Court of the United States delivered by Justice Jackson, to which Justice Roberts noted his dissent, two unsettled questions "important to the administration of the current Railway Labor Act" were disposed of. The case—*Order of Railroad Telegraphers vs. Railway Express Agency*—grew out of an adjustment in rates of pay to agents at certain Seaboard Air Line stations made by the express agency in 1930, when it began to handle carload shipments of perishables that had formerly moved as freight.

Remarking that "the litigation shows no evidence of reckless haste on the part of either party," Justice Jackson pointed out that the basic issue was whether the carrier could by contracts made with individual employees in 1930 supersede the terms of an agreement collectively bargained with the union representing them in 1917, in view of the provisions of the Railway Labor Act of 1926, then applicable. This act, as well as the act of 1934, provided that either party should give at least 30 days written notice of an intended change in rates of pay or working conditions, and should agree upon time and place of conference.

Individual Notices — The express agency gave no such notice to the union, the court remarked. "Instead, it gave individual notices to the agents, . . . the notices on one division going out on March 25, and

those on another April 8, and all becoming effective April 10, 1930." After negotiations, the agents individually accepted the new rate of compensation, and the court "assumed" that "but for the provisions of the Railway Labor Act valid individual contracts resulted."

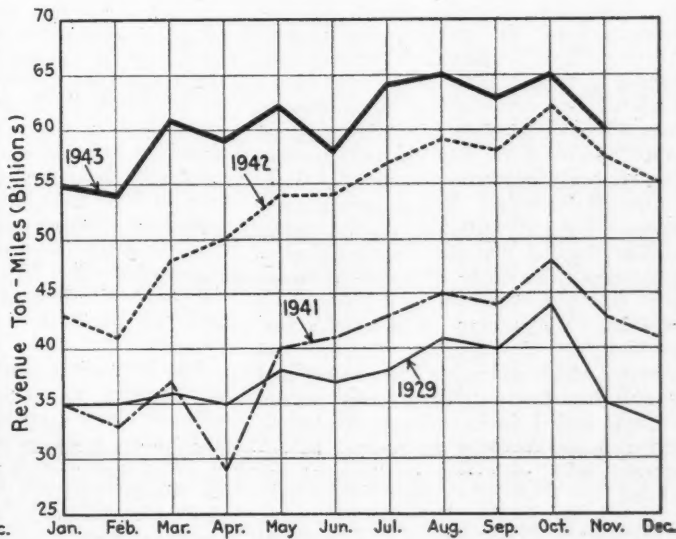
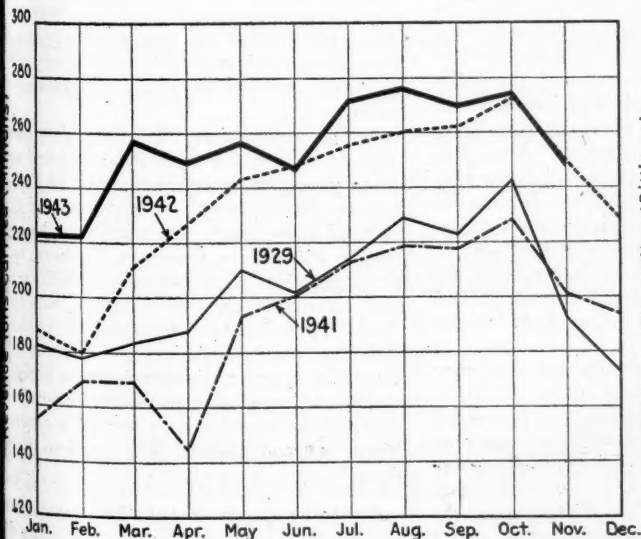
The local chairman of the union protested. Negotiations continued until after the passage of the act of 1934 establishing a statutory adjustment board, and in 1937, after meeting various difficulties, this board made an award to the effect that the individual contracts were invalid and that the agents were entitled to compensation under the terms of the collective bargained agreement of 1917. The carrier did not comply with the award, and in 1939, "after almost two years," court action was commenced to secure its enforcement.

The district court in 1942 rendered a decision enforcing the award, but the circuit court of appeals reversed the finding on two grounds: (1) "that the collective agreement had been superseded validly by the individual contracts," and (2) that the claims under the collective agreements were barred by the statute of limitations. The Supreme Court reversed this finding as to both points.

Limitations Statute Inapplicable —

Because the carrier did not "proceed as provided by the Railway Labor Act" the collective agreement remained in force, Justice Jackson held, and the adjustment board's award was valid. "Effective collective bargaining has been generally conceded to include the right of the representatives of the unit to be consulted and to bargain about the exceptional as well as the routine rates, rules, and working conditions. . . . But the company did not observe the right of the representatives of the whole unit to be notified and dealt with concerning a matter which from an employee's point of view may not be exceptional or which may provide a leverage for taking away other advantages of the collective contract."

The state 6-year statute of limitations was not applicable under the circumstances,



Revenue Tons and Revenue Ton-Miles—1943 Compared With 1929, 1941 and 1942

the Supreme Court majority held, even though enforcement of the award results in entering judgment in 1942 on claims that began to accrue in 1930 and, in some instances, ceased to accrue over 6 years before suit was commenced. The action, it was pointed out, was not a common law action, but was of statutory origin, its purpose being to enforce the award of an administrative body. "There is no federal statute of limitations applicable to unadjusted claims which the adjustment board may consider," said Justice Jackson. "It is difficult to see how state statutes of limitations can restrict the power of the federal administrative tribunal to consider and adjust claims." While a federal statute does prescribe a 2-year limitation upon beginning court action involving a board award, in this case action was brought within that period.

"Regrettable as the long delay has been it has been caused by the exigencies of the contest," said the court, "and not by neglect to proceed. We find no basis for applying a state statute of limitations to cut off the right of the adjustment board to consider the claims or to absolve the courts from the duty to enforce an award."

Ortiz Succeeds Ramirez on National Railways of Mexico

Andres Ortiz, a highway construction engineer in Mexico and at one time governor of the state of Chihuahua, was appointed general manager of the National Railways of Mexico on February 21 to succeed Margarito Ramirez, resigned. In accepting the appointment Mr. Ortiz said: "The President of the Republic has conferred the honor of appointing me general manager of the National Railways of Mexico and I have accepted it fully conscious of the responsibility. He has given me complete authority in the rehabilitation of the properties and his full backing in the performance of my duties.

"The whole country knows that our railway system is the vital nerve of the nation and the veins through which the public wealth circulates. For many years the maintenance and improvement of the lines and repairs to rolling stock have been put off. Yet, the construction of irrigation systems, highways and new industries and the suspension of ocean traffic and the connection of our system with Central America, have considerably increased the volume of freight to be transported by the National Railways. These circumstances, some of them favorable, should have been taken advantage of and the railways improved, but instead they remain far from the acceptable limits. The country's newspapers, those affected and general public opinion demand that the rehabilitation of the railways be made on technical bases. It is therefore necessary to put the house in order. My program is: to start a new working era of discipline, efficiency and honesty, which will serve the country and give it an efficient transportation system. To this end I invite officers, employees, trainmen and workers in general to co-operate fully with this fundamental intention.

Welcomes U. S. Aid—"It is essential that the technique used in all modern railway systems be established again on the National

Lines. The good neighbor policy of President Roosevelt, which has been skilfully understood by our government, has brought to Mexico technical and economical assistance, which we appreciate very much. It has been gratifying to me to note that important officers of the National Lines recognize the assistance rendered by the American Mission, and the courteous and gentleman-like manners used by the American technicians in their relations with our officers, employees, trainmen and workers.

"The Mexican railroad men have observed that they are 30 years behind in the technique used on the National Lines. And if foreign elements co-operate with us to give the railway problem a solution, we are bound through elementary decorum, to put forth our best disciplined efforts to achieve that objective."

Bills of Lading of Freight Forwarders

Making their proposed report in the Interstate Commerce Commissioner's No. 28990 investigation with respect to bills of lading of freight forwarders, Examiners David T. Copenhafer and T. Leo Haden have recommended that the commission disapprove present and proposed rules, regulations and practices, and find that "in all instances where shipments move under forwarder rates, under which the freight forwarder is responsible for the transportation, there must be issued a through bill of lading, either by the forwarder itself or by the participating or non-participating common carrier in the name of the forwarder as its agent, to cover transportation from initial point of origin to ultimate destination."

Such a rule, as the examiners see it, is required in order that definite responsibility to the shipper be clearly established. Under present practices through bills of lading are issued by the forwarders for shipments received directly, or by participating carriers as agents for forwarders covering shipments moving under joint rates; by participating carriers in other instances in their own names and adopted by the forwarders; and by non-participating carriers in their own names covering traffic moving under forwarder rates, and adopted by the forwarders.

In other instances the bills of lading are issued by non-participating common carriers covering transportation from origin to stations of the forwarders and thereafter an additional bill of lading is issued by the forwarders to cover transportation from origin to ultimate destination. Also, forwarders receive less-truckload shipments consigned to them at on-line stations intended for different consignees and destinations for which they execute at their on-line stations individual bills of lading from initial points of origin to ultimate destination and mail the bills of lading back to the shippers.

The forwarders generally ask that they be permitted to continue these practices, while the motor carriers handling forwarder traffic want to retain the right to sign bills of lading in their own name. In calling for the order requiring a through bill of lading in the name of the forwarder, the proposed report condemns the present and proposed rules and practices as "unjust and unreasonable, in violation of section 404(a) of

the act; indefinite and uncertain in violation of section 405(a), and in violation also of section 413 of the act."

Parmelee to Address Marketers

Dr. Julius H. Parmelee, director of the Bureau of Railway Economics, Association of American Railroads, will address the Northeastern Ohio Chapter of the American Marketing Association at the Mid-Day Club, Union Commerce Building, Cleveland on Tuesday, March 14.

I. C. C. Service Orders

The Interstate Commerce Commission's Service Order No. 115, as amended, prohibiting holding for reconsignment or diversion refrigerator cars of fruits or vegetables originating in specified southern states, has been set aside by Service Order No. 115-C, effective March 5.

By Special Permit No. 5 under Service Order No. 178 the commission has removed concentrated citrus juice from the list of commodities that may not be shipped in refrigerator cars under the provisions of that order.

Chicago & North Western Uses Cement Cars for Grain

Cement cars are being used by the Chicago & North Western as an emergency measure to transport corn and wheat from the Midwest. Approximately 400 covered hopper cars are being used where practicable to offset the grain car shortage. The cars are routed primarily to elevators equipped with track pits or other suitable means of receiving the grain, which is unloaded through hoppers under the cars. The cars carry about 40 tons of wheat and 40 tons of corn or soybeans.

Another Try at Yonkers Branch Abandonment

Abandonment of a 3.1-mile electrified branch line of the New York Central, which afforded passenger service to a portion of the city of Yonkers, N. Y., has been authorized upon rehearing and reconsideration by the Interstate Commerce Commission. The abandonment had been certified by a Division 4 order of March 20, 1943, and operations were discontinued June 30, 1943, but the road has kept the line physically intact since then, pending conclusion of court proceedings arising from the abandonment order.

In its report after reconsideration upon its own motion, the commission pointed out that protestants, including the city of Yonkers, the Public Service Commission of the state of New York, and representatives of certain commuters living in Yonkers, had petitioned for rehearing after Division 4 had authorized the abandonment, and had then for the first time advanced the contention that the commission was without authority to approve the abandonment because the line involved was an electric interurban railroad not operated as a part of a general steam railroad system. The petitions were denied.

Supreme Court View—The protestants then went to court to have the certificate of authority set aside, and as reported in *Railway Age* of January 8, page 171, the Su-

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Heat and Power

... FOR NEW ENGLAND

Prior to the war, ocean tanker delivery of oil to the Atlantic seaboard accounted for over 95% of the total reaching this territory.

Today, tanker deliveries have shrunk to less than 15%, with over 85% depending on overland and inland waterway movement.

Hence: such Lima-drawn, solid oil trains as this one, photographed as it was running on the Boston and Maine from Mechanicsville,

New York, to Boston, with its welcome cargo of heat and power for New England homes and factories.

To the successful furtherance of this nation's drive to Victory, Lima-built Modern Super-Power Steam Locomotives serve the railroads from coast to coast in their gigantic task of supplying the almost endless needs of our home front and our fighting fronts.

LIMA LOCOMOTIVE WORKS



INCORPORATED, LIMA, OHIO

preme Court of the United States held that it should be set aside because of the absence of the requisite jurisdictional findings. The necessity for such findings was found in that exemption from the commission's authority to approve abandonments contained in section 1(22) of the Interstate Commerce Act, applying to interurban electric lines, not operated as part of a general steam railroad system.

In recognition of this court finding, the commission's report set forth its definite conclusion that it has authority in this case, since the line in question is, on several grounds, found to have been operated as part of the New York Central system. No evidence in support of the contrary view was introduced by the protestants, it pointed out.

People Abandoned the R.R.—As to other arguments against approving the abandonment, the report indicated the commission's opinion that "the people of Yonkers virtually deserted this branch, and the applicant ought not to be required to maintain it, at a continuing loss of approximately \$60,000 annually, for the few people who found it somewhat more convenient than available alternate means of transportation." The state's contention that the commission lacked jurisdiction because the line was wholly within the state, its traffic was wholly passenger, and there was no showing that it was operated in interstate commerce, was dismissed on the ground that, apart from the fact that some of its passenger business probably was in interstate commerce, the burden of its operation at a loss would fall upon interstate commerce.

The contention of the commuters' committee that the commission was disqualified from acting in this case because "pressure" had been put upon it by a war agency to authorize the abandonment also was discussed in the report. Such "pressure" de-

veloped from efforts of the War Production Board to obtain rail and other materials for the use of the military services at a time when new materials were not available in sufficient quantities, as a result of which the Yonkers abandonment was urged upon the railroad, according to the report.

War Not the Cause—The commission took the position, however, that such need, "however urgent or vital to the winning of the war," would not alone justify a finding of convenience and necessity to permit the abandonment. In this case, though, it was not called upon to consider this factor, it went on to say, as the abandonment was found to be warranted on other grounds.

The fact that the railroad had not secured from the state commission its consent to discontinue service on the line does not enter into the case, the report indicated further, since the statutory jurisdiction of the I. C. C. is "exclusive" in such abandonments, and no other approval is required. The usual 2-year reservation as to employees adversely affected was included in the commission's certificate.

Operating Expenses Taxed as "Profits"

(Continued from page 470)

only \$32 millions was in the hands of the public. Other company obligations acquired by purchase from the public were in excess of \$13 millions.

In addition to outright reduction in indebtedness, the company effected savings in interest charges through the refunding of bonds of two lessor companies—bringing thereby an aggregate lowering (during the life of the issues) of \$18 millions in fixed charges.

The Pennsylvania estimates that the wage increases granted to employees in 1943 will

increase its operating expenses by \$15 millions.

Extensive additions and betterments were made during the year, in order to accommodate the heavy burden of war traffic—these including considerable additional trackage and additions to motive power, with some additions to freight rolling stock and marine equipment.

Signal Section to Meet

The 48th annual convention of the Signal Section, Association of American Railroads, will be held at the Stevens Hotel, Chicago, October 4 and 5.

Club Meetings

"Shop and Repair Track Facilities" is the title of a paper to be presented by W. S. Koener, car foreman, Chicago, Burlington & Quincy, at the March 6 meeting of the Northwest Car Men's Association which will take place at 8 p. m. in the Midway Club, 1931 University avenue, St. Paul, Minn.

The New England Railroad Club will hold its 61st annual meeting and election of officers March 14, at Hotel Vendome, Boston. Following a 6:30 dinner, there will also be a showing of the New York New Haven & Hartford motion picture "A Great Railroad at Work."

Meetings and Conventions

The following list gives name of secretaries, dates of next or regular meetings and places of meetings:

ALLIED RAILWAY SUPPLY ASSOCIATION.—J. I. Gettrust, P. O. Box 5522, Chicago 80, Ill.
AMERICAN ASSOCIATION OF GENERAL BAGGAGE AGENTS.—E. P. Soebbing, Railway Exchange Bldg., St. Louis, Mo.
AMERICAN ASSOCIATION OF PASSENGER TRAFFIC OFFICERS.—B. D. Branch, C. R. R. of N. Y., 143 Liberty St., New York 6, N. Y.
AMERICAN ASSOCIATION OF RAILROAD SUPERINTENDENTS.—Miss Elinor Heffern, Room 83

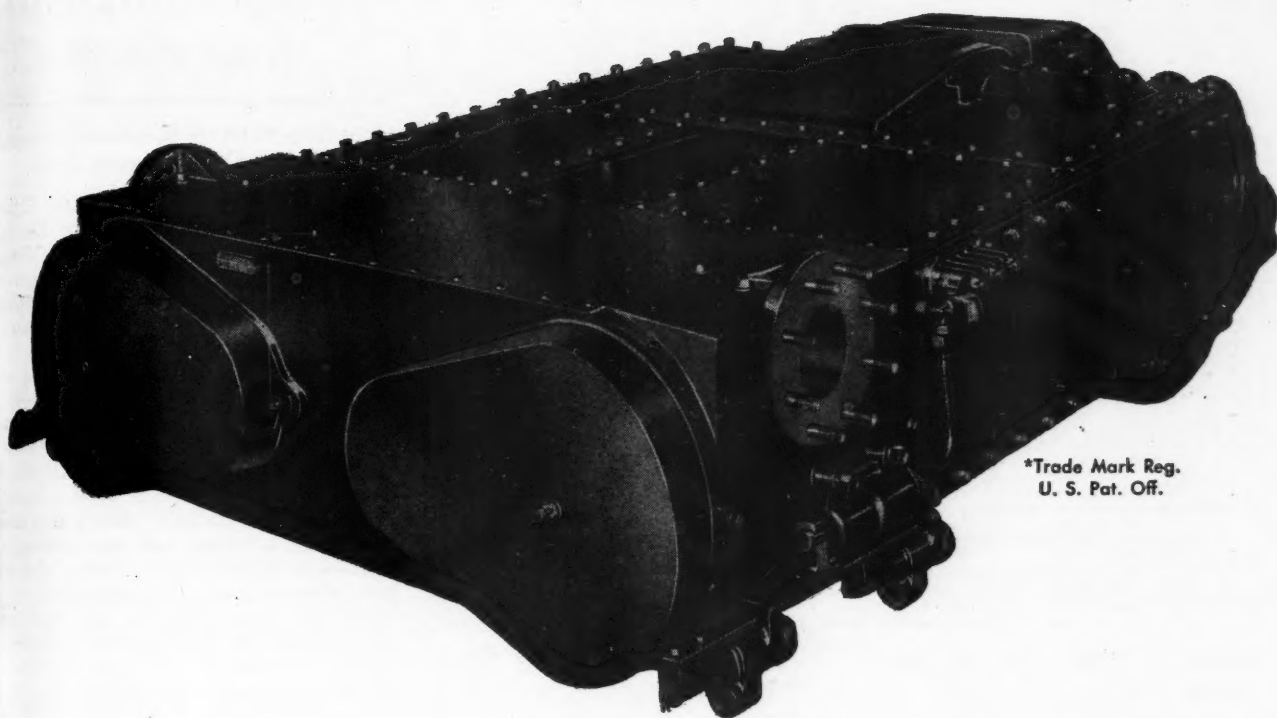
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Rebuilt Poultry Car

Several hundred poultry cars purchased in 1941 by the Railway Accessories Company, Cincinnati, Ohio, were converted into single-sheathed box cars. Only 7,300 lb. of new steel was required per car. Most were shipped to government agencies or private contractors engaged in construction.

THE NEW TYPE "E" BOOSTER*



*Trade Mark Reg.
U. S. Pat. Off.

Powerful . . . rugged . . . efficient . . . and very economical in its requirements of steam, the new Type "E" Booster has been expressly designed to meet the more exacting demands imposed by today's operating conditions, and by the trend toward higher locomotive boiler pres-

ures. Its short cut-off takes full advantage of the expansive properties of the steam and effects marked economies in steam consumption. Roller bearing crankshafts, dynamic balancing of the engine, and larger gear teeth, hold maintenance costs to a minimum.

FRANKLIN RAILWAY SUPPLY COMPANY, INC.
NEW YORK • CHICAGO

In Canada: FRANKLIN RAILWAY SUPPLY COMPANY, LIMITED, MONTREAL

March 4, 1944

310 South Michigan Ave., Chicago 4, Ill. Annual meeting May 9-11, 1944, Hotel Stevens, Chicago, Ill.

AMERICAN ASSOCIATION OF RAILWAY ADVERTISING AGENTS.—E. A. Abbott, Poole Bros., Inc., 85 W. Harrison St., Chicago, Ill.

AMERICAN ASSOCIATION OF SUPERINTENDENTS OF DINING CARS.—F. R. Borger, C. I. & L. Ry., 836 S. Federal St., Chicago, Ill.

AMERICAN RAILWAY BRIDGE AND BUILDING ASSOCIATION.—Miss Elinor Heffern, Room 839, 310 South Michigan Ave., Chicago 4, Ill. Annual meeting, October, 1944, Chicago, Ill.

AMERICAN RAILWAY CAR INSTITUTE.—W. C. Tabbert, 19 Rector St., New York 6, N. Y.

AMERICAN RAILWAY DEVELOPMENT ASSOCIATION.—J. B. Lancot, Canadian National Rys., St. Paul, Minn.

AMERICAN RAILWAY ENGINEERING ASSOCIATION.—Works in cooperation with the Association of American Railroads, Engineering Division.—W. S. Lacher, 59 E. Van Buren St., Chicago 5, Ill. Annual meeting, March 14-16, 1944, Palmer House, Chicago, Ill.

AMERICAN RAILWAY MAGAZINE EDITORS' ASSOCIATION.—Page N. Price, Norfolk & Western Magazine, Roanoke, Va.

AMERICAN SHORT LINE RAILROAD ASSOCIATION.—W. R. Stough, Jr. (Ass't Secy.-Treas.), Tower Bldg., Washington, D. C.

AMERICAN SOCIETY OF MECHANICAL ENGINEERS.—C. E. Davies, 29 W. 39th St., New York 18, N. Y.

Railroad Division.—E. L. Woodward, Railway Mechanical Engineer, 105 W. Adams St., Chicago 3, Ill.

AMERICAN TRANSIT ASSOCIATION.—Guy C. Hecker, 292 Madison Ave., New York 17, N. Y.

AMERICAN WOOD PRESERVERS' ASSOCIATION.—H. L. Dawson, 1427 Eye St., N. W., Washington 5, D. C. Annual Meeting, April 26, 1944, Palmer House, Chicago, Ill.

ASSOCIATED TRAFFIC CLUBS OF AMERICA, INC.—A. S. Beery, Newsweek, Dayton, Ohio.

ASSOCIATION OF AMERICAN RAILROADS.—H. J. Forster, Transportation Bldg., Washington 6, D. C.

Operations and Maintenance Department.—Charles H. Buford, Vice-President, Transportation Bldg., Washington 6, D. C.

Operating-Transportation Division.—L. R. Knott, 59 E. Van Buren St., Chicago 5, Ill.

Operating Section.—J. C. Caviston, 30 Vesey St., New York 7, N. Y.

Transportation Section.—L. R. Knott, 59 E. Van Buren St., Chicago 5, Ill.

Fire Protection and Insurance Section.—W. F. Steffens, New York Central, Room 3317, 230 Park Avenue, New York 17, N. Y.

Freight Station Section.—L. R. Knott, 59 E. Van Buren St., Chicago 5, Ill.

Medical and Surgical Section.—J. C. Caviston, 30 Vesey St., New York 7, N. Y.

Protective Section.—J. C. Caviston, 30 Vesey St., New York 7, N. Y.

Safety Section.—J. C. Caviston, 30 Vesey St., New York 7, N. Y.

Telegraph and Telephone Section.—W. A. Fairbanks, 30 Vesey St., New York 7, N. Y.

Engineering Division.—W. S. Lacher, 59 E. Van Buren St., Chicago 5, Ill. Annual meeting, March 14-16, 1944, Palmer House, Chicago, Ill.

Construction and Maintenance Section.—W. S. Lacher, 59 E. Van Buren St., Chicago 5, Ill.

Electrical Section.—W. S. Lacher, 59 E. Van Buren St., Chicago 5, Ill.

Signal Section.—R. H. C. Balliet, 30 Vesey St., New York 7, N. Y.

Mechanical Division.—Arthur C. Browning, 59 E. Van Buren St., Chicago 5, Ill. Annual meeting, June 23-24, 1944, Jefferson Hotel, St. Louis, Mo.

Electrical Section.—J. A. Andreucetti, 59 E. Van Buren St., Chicago 5, Ill.

Purchases and Stores Division.—W. J. Farrell (Executive Vice-Chairman), Transportation Bldg., Washington 6, D. C. Annual meeting, June, 1944, Palmer House, Chicago, Ill.

Freight Claim Division.—Lewis Pilcher, 59 E. Van Buren St., Chicago 5, Ill. Annual meeting, April 25-27, 1944, Netherland Plaza Hotel, Cincinnati, O.

Motor Transport Division.—George M. Campbell, Transportation Bldg., Washington 6, D. C.

Car Service Division.—E. W. Coughlin (Assistant to Chairman), Transportation Bldg., Washington 6, D. C.

Finance, Accounting, Taxation and Valuation Department.—E. H. Bunnell, Vice-President, Transportation Bldg., Washington 6, D. C.

Accounting Division.—E. R. Ford, Transportation Bldg., Washington 6, D. C.

Treasury Division.—E. R. Ford, Transportation Bldg., Washington 6, D. C.

Traffic Department.—A. F. Cleveland, Vice-President, Transportation Bldg., Washington 6, D. C.

ASSOCIATION OF RAILWAY CLAIM AGENTS.—F. L. Johnson, Alton R. R., 340 W. Harrison St., Chicago, Ill.

BRIDGE AND BUILDING SUPPLY MEN'S ASSOCIATION.—P. R. Austin, Johns-Manville Sales Corp., Merchandise Mart, Chicago, Ill.

CANADIAN RAILWAY CLUB.—C. R. Crook, 4415 Marcell Ave., N. D. G., Montreal, Que. Regular meetings, second Monday of each month, except June, July and August, Windsor Hotel, Montreal, Que.

CAR DEPARTMENT ASSOCIATION OF ST. LOUIS, MO.—J. J. Sheehan, 1101 Missouri Pacific Bldg., St. Louis, Mo. Regular meetings, third Tuesday of each month, except June, July and August, Hotel De Soto, St. Louis, Mo.

CAR DEPARTMENT OFFICERS' ASSOCIATION.—F. H. Stremmel, 6536 Oxford Ave., Chicago 31, Ill.

CAR FOREMEN'S ASSOCIATION OF CHICAGO.—Ralph J. Feddor, 2803 N. Campbell Ave., Chicago, Ill. Regular meetings, second Monday of each month, except June, July and August, La Salle Hotel, Chicago, Ill.

CENTRAL RAILWAY CLUB OF BUFFALO.—R. E. Mann, 1840-42 Hotel Statler, McKinley Square, Buffalo, N. Y. Regular meetings, second Thursday of each month, except June, July and August, Hotel Statler, Buffalo, N. Y.

EASTERN ASSOCIATION OF CAR SERVICE OFFICERS.—H. J. Hawthorne, Union Railroad, East Pittsburgh, Pa.

EASTERN CAR FOREMAN'S ASSOCIATION.—W. P. Dizard, 30 Church St., New York 7, N. Y. Regular meetings, second Friday of January, February (Annual Dinner), March, April, May, October and November, 29 W. 39th St., New York, N. Y.

LOCOMOTIVE MAINTENANCE OFFICERS' ASSOCIATION.—C. M. Lipscomb, 1721 Parker Street, North Little Rock, Ark.

MASTER BOILER MAKERS' ASSOCIATION.—A. F. Stiglmeier, 29 Parkwood St., Albany 3, N. Y. Annual meeting, September, 1944, Hotel Sherman, Chicago, Ill.

NATIONAL ASSOCIATION OF RAILROAD AND UTILITIES COMMISSIONERS.—Ben Smart, 7413 New Post Office Bldg., Washington, D. C.

NATIONAL ASSOCIATION OF SHIPPERS' ADVISORY BOARDS.—C. J. Goodyear, 725 Reading Terminal, Philadelphia 5, Pa.

NATIONAL INDUSTRIAL TRAFFIC LEAGUE.—Edward F. Lacey, Suite 450, Munsey Bldg., Washington 4, D. C. Annual meeting, November, 1944, Hotel Pennsylvania, New York, N. Y.

NATIONAL RAILWAY APPLIANCE ASSOCIATION.—C. H. White, Room 1826, 208 S. La Salle St., Chicago 4, Ill.

NATIONAL SCALE MEN'S ASSOCIATION.—J. A. Schmitz, 163 Ivanhoe Terrace, Riverdale, Ill. Annual meeting, March 13-14, 1944, Hotel Sherman, Chicago, Ill.

NEW ENGLAND RAILROAD CLUB.—W. E. Cade, Jr., 683 Atlantic Ave., Boston, Mass. Regular meetings, second Tuesday of each month, except June, July, August and September, Hotel Vendome, Boston, Mass.

NEW YORK RAILROAD CLUB.—D. W. Pye, 30 Church St., New York 7, N. Y. Regular meetings, third Thursday of each month, except June, July, August, September and December, 29 W. 39th St., New York, N. Y.

NORTHWEST CARMEN'S ASSOCIATION.—E. N. Myers, Minnesota Transfer Ry., St. Paul, Minn. Regular meetings, first Monday of each month, except June, July and August, Midway Club, 1931 University Ave., St. Paul, Minn.

PACIFIC RAILWAY CLUB.—William S. Wollner, P. O. Box A, Sausalito, Cal. Regular meetings, second Thursday of each alternate month, at Palace Hotel, San Francisco, Cal., and Hotel Hayward, Los Angeles, Cal.

RAILWAY BUSINESS ASSOCIATION.—P. H. Middleton, First National Bank Bldg., Chicago, Ill.

RAILWAY CLUB OF PITTSBURGH.—J. D. Conway, 308 Keenan Bldg., Pittsburgh, Pa. Regular meetings, fourth Thursday of each month, except June, July and August, Fort Pitt Hotel, Pittsburgh, Pa.

RAILWAY ELECTRIC SUPPLY MANUFACTURERS' ASSOCIATION.—J. McC. Price, Allen-Bradley Company, 624 W. Adams St., Chicago 6, Ill.

RAILWAY FUEL AND TRAVELING ENGINEERS' ASSOCIATION.—T. Duff Smith, Room 811, Utilities Bldg., 327 S. La Salle St., Chicago, Ill.

RAILWAY SUPPLY MANUFACTURERS' ASSOCIATION.—J. D. Conway, 308 Keenan Bldg., Pittsburgh, Pa.

RAILWAY TELEGRAPH AND TELEPHONE APPLIANCE ASSOCIATION.—G. A. Nelson, Waterbury Battery Company, 30 Church St., New York 7, N. Y. Meets with Telegraph and Telephone Section of A. A. R.

RAILWAY TIE ASSOCIATION.—Roy M. Edmonds, 610 Shell Bldg., St. Louis 3, Mo. Annual meeting, May 16-17, 1944, Netherland Plaza Hotel, Cincinnati, O.

ROADMASTERS' AND MAINTENANCE OF WAY ASSOCIATION.—Miss Elinor Heffern, Room 839, 310 S. Michigan Ave., Chicago 4, Ill. Annual meeting, September 19-21, 1944, Hotel Stevens, Chicago, Ill.

SIGNAL APPLIANCE ASSOCIATION.—G. A. Nelson, Waterbury Battery Company, 30 Church St., New York 7, N. Y. Meets with A. A. R. Signal Section.

SOUTHERN AND SOUTHWESTERN RAILWAY CLUB.—A. T. Miller, 4 Hunter St., S. E., Atlanta, Ga. Regular meetings, third Thursday in January, March, May, July, September and November, Ansley Hotel, Atlanta, Ga.

SOUTHERN ASSOCIATION OF CAR SERVICE OFFICERS.—D. W. Brantley, C. of Ga., Savannah, Ga.

TORONTO RAILWAY CLUB.—D. M. George, P. O. Box 8, Terminal "A," Toronto, Ont. Regular meetings, fourth Monday of each month, except June, July and August, Royal York Hotel, Toronto, Ont.

TRACK SUPPLY ASSOCIATION.—Lewis Thomas, Q. and C. Company, 59 E. Van Buren St., Chicago 5, Ill.

UNITED ASSOCIATIONS OF RAILROAD VETERANS.—Roy E. Collins, 112 Hatfield Place, Port Richmond, Staten Island 2, N. Y.

WESTERN RAILWAY CLUB.—E. E. Thulin, Suite 339, Hotel Sherman, Chicago, Ill. Regular meetings, third Monday of each month, except January, June, July, August and September, Hotel Sherman, Chicago, Ill.

Equipment and Supplies

Electro-Motive Reports Larger Diesel Deliveries in 1943

Diesel engines delivered to the United States Navy during 1943 by the Electro-Motive division of the General Motors Corporation totaled twice the horsepower built into General Motors Diesel locomotives in the highest pre-war production year, according to C. R. Osborn, vice-president of General Motors and general manager of the Electro-Motive division, at La Grange, Ill. Electro-Motive's locomotive production was severely curtailed during the first four months of 1943, due to the diversion of materials used in Diesel locomotive construction. When the material situation eased, and the government focused its efforts upon relieving the motive power shortage, the company was directed, in May, 1943, to get back into heavy production of General Motors Diesel freight locomotives, with no curtailment of Navy engine production. The company's production of Diesel engines for the Navy is currently continuing at the same rate as in 1943 and locomotive production for 1944 has already been increased over 1943 by government direction. Present plans call for further substantial increases.

Electro-Motive reports that it is now putting considerably more Diesel horsepower on American railroads than in the highest previous month in the history of the division, and anticipates a further increase in this rate of production after the war due to the expected demand for this type of motive power. A record month's production was set in December when the company completed 10 Diesel-electric locomotives of 5,400-hp. each, including one each for the Chicago, Burlington & Quincy; the Great Northern; the Boston & Maine; the Atlantic Coast Line; the Southern and the Missouri Pacific, and two each for the Atchison, Topeka & Santa Fe and the Denver & Rio Grande Western.

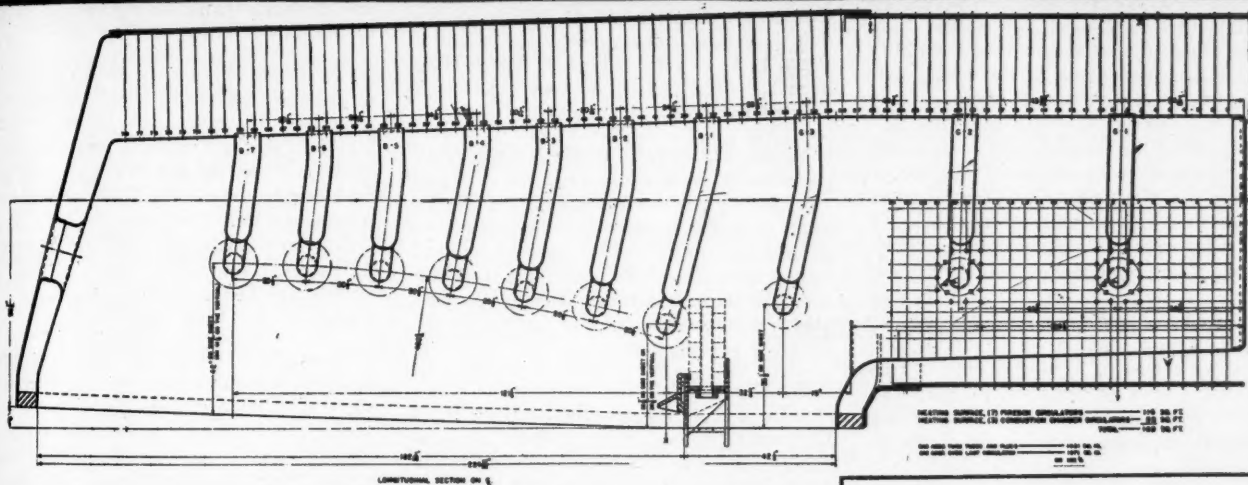
Milwaukee Equipment Program

The Chicago, Milwaukee, St. Paul & Pacific has completed arrangements for financing \$9,692,300 worth of equipment, including six 5,400-hp. Diesel-electric locomotives, ten steam locomotives of 4-8-4 wheel arrangement, 1,000 40½-ft. box

BETTER COMBUSTION

for modern freight locomotives

through the application of



The problem of supporting brick arches has been effectively solved by the Security Circulator, a development of the American Arch Company.

In addition, many other benefits have accrued. Positive flow of water over CENTER of crown sheet is assured. Reduction of honeycombing, flue plugging, and cinder cutting lessens the maintenance of the boiler. The Security Circulator itself is extremely low in maintenance cost.

On the Security Circulators that have been installed during the last nine years, performance has been thoroughly proved by over 60,000,000 locomotive miles of service.

1. POSITIVE FLOW OF WATER OVER CENTER OF CROWN SHEET
2. REDUCED HONEYCOMBING
3. REDUCED FLUE PLUGGING
4. REDUCED CINDER CUTTING
5. BETTER ARCH SUPPORT

AMERICAN ARCH CO., INC.

NEW YORK • CHICAGO

SECURITY CIRCULATOR DIVISION

cars of 50-tons' capacity, 500 50½-ft. box cars of 50 tons' capacity, 35 mill-type gondola cars, 25 caboose cars and one 200-ton wrecking crane.

LOCOMOTIVES

The BALTIMORE & OHIO has received delivery of the first of twenty new Mallet locomotives being built by the Baldwin Locomotive Works. This is the largest steam locomotive ever operated by the B. & O. and will be used principally for hauling heavy coal trains from the West Virginia fields to the east. The locomotive is capable of hauling, unaided, 2,000 tons in one train over the Allegheny mountains.

The CHESAPEAKE & OHIO has ordered 15 heavy-duty, Allegheny-type freight locomotives of 2-6-6-6 wheel arrangement, to cost approximately \$4,200,000, from the Lima Locomotive Works. Deliveries are scheduled to start next September. Ten other Allegheny engines ordered in May, 1943, will be completed at the Lima plant during the next four or five months.

The 15 locomotives will supplement a fleet of 20 of identical design now in use in the heavy 'cross-mountain haulage of coal on the Chesapeake & Ohio between Clifton Forge, Va., and Hinton, W. Va. The Allegheny-type engines are designed to meet the special power requirements of the road's mountain territory and their operation has greatly lessened the need for "double-heading" in 'cross-mountain service. The combined overall length of engine and tender is approximately 113 ft., and the combined weight of engine and tender in working order is 1,152,000 lb. The tender has a capacity of 25 tons of coal and 25,000 gals. of water. The locomotives are reported capable of a sustained speed of 70 miles an hour. The inquiry for these locomotives was reported in the *Railway Age* of January 29.

The NORTHERN PACIFIC has received the first of eleven 5,400-hp. Diesel-electric road locomotives being constructed by the Electro-Motive division of the General Motors Corporation. Six more are scheduled for delivery in 1944 and four in 1945. The locomotives are to be used in freight service on the Western district. They are 183 ft. long and weigh 856,000 lb., with a capacity of 4,800 gal. of fuel oil, 760 gal. of lubricating oil and 900 gal. of water for cooling. Each locomotive is made up of four articulated units, each unit generating 1,350 hp. They are geared for a top speed of 80 m.p.h.

FREIGHT CARS

THE UNION PACIFIC is planning to purchase 1,000 refrigerator cars.

THE NASHVILLE, CHATTANOOGA & ST. LOUIS is considering the purchase of 200 hopper cars.

THE CHICAGO, ROCK ISLAND & PACIFIC has been authorized to purchase 500 50-ton box cars by the federal district court at Chicago.

Supply Trade

Charles A. Otto has been appointed manager of eastern railway sales for the Murphy Varnish Company.

Henry H. Ziesing has been elected vice-president in charge of sales of the Midvale Company to succeed Stuart Hazlewood, who has resigned after more than 41 years with the company.

W. S. Long, formerly operations manager of the United States Rubber Company's Los Angeles, Calif., plant, has been appointed Pacific coast sales manager, mechanical goods. He will continue in charge of the company's war products activities on the Pacific coast.

William C. Bamber has been elected president of the Wendell & MacDuffie Company, New York, to fill a position that has been vacant since the death of Rufus L. MacDuffie in 1934. J. Karel Huybers has been elected secretary and treasurer of the company.

Victor E. Rennix, formerly sales representative at the Chicago office of the Baldwin Locomotive Works, and for the last two years associated with the Transportation Section of the War Production Board, joined the sales staff of the Electro-Motive Division, General Motors Corporation, with headquarters at LaGrange, Ill., effective February 1.

P. E. Floyd, sales manager, Chicago district, for the Allegheny Ludlum Steel Corporation, has been appointed assistant general manager of sales, with headquarters at the company's main office at Brackenridge, Pa. Mr. Floyd recently returned to Allegheny Ludlum from Washington, D. C., where he was chief of the stainless section of the steel division of the War Production Board.

Joseph F. O'Brien has been appointed assistant to the president of the Vulcan Iron Works, Wilkes-Barre, Pa. Mr. O'Brien began his career as an apprentice in the Vulcan shops more than 30 years ago. Ralph O. Smith, formerly in charge of mining machinery sales for the company, has been appointed general sales manager.

H. B. Ellis, service manager, Electro-Motive Division, General Motors Corporation, has been given the title of director of parts and service. D. H. Queeney, formerly in the engineering and sales departments, has been appointed service manager, reporting to Mr. Ellis. W. D. Davis, formerly assistant service manager, has been appointed parts service manager, also reporting to Mr. Ellis. These changes were effective February 16.

William F. Vosmer, who has been associated with the Steel section of the War Production Board, has rejoined the Republic Steel Corporation as manager of railroad sales to succeed Emmett Conneely, deceased. Before entering government service, Mr. Vosmer was manager of

sales of the Bar division of Republic. Mr. Vosmer started his career in the steel business as a salesman of the Cambria Steel Company. Successively he became assistant manager of the Structural and Plate division of the Midvale Steel and Ordnance Company and vice-president in charge of sales of the Donner Steel Company, which position he held until this company became a part of Republic in 1930.

Construction

BALTIMORE & OHIO.—This road has applied to the Interstate Commerce Commission for authority to construct and operate a 9.63-mile extension of its West Virginia and Pittsburgh Main Line branch from a point near Donaldson, W. Va., along the southerly bank of the Williams river to the Three Forks of that river.

CANADIAN NATIONAL.—This railroad has awarded a contract to the J. N. Pitts Construction Company, of Winnipeg, Canada, for the clearing, grading and installation of culverts on the 3.3-mile spur line to be built to the Steep Rock Iron Mines near Atikokan, Ont. The contract calls for 100-lb. rail, and the necessary bridge over the Atikokan river will be of timber construction. The project is scheduled to be completed by June 30.

FLORIDA EAST COAST.—This railroad has awarded a contract for the construction of an open 65-ft. by 250-ft. paved pier, of steel sheet pile bulkhead, with two tracks, at Miami, Fla., at estimated cost of \$55,000, to the Reed Construction Corporation, of Miami Beach, Fla.

ILLINOIS CENTRAL.—The Interstate Commerce Commission has been asked to approve the construction of a 2.43-mile spur from Daniel Boone, Ky., to Williams Mine, to be operated by this road and built by its subsidiary, the Chicago, St. Louis & New Orleans.

MASSENA TERMINAL.—The New York Public Service Commission has authorized this railroad to construct bridges over the Grasse and Racquette rivers in Massena, N. Y. The new spans will replace existing bridges constructed in 1897 and now considered inadequate to carry the greatly increased weight of modern equipment. The Racquette river bridge will be built at a point approximately 1,200 ft. east of the existing span, and the new Grasse river bridge will be about 65 ft. east of the existing bridge.

WAR DEPARTMENT.—The U. S. Engineer office, Los Angeles, Calif., has awarded a contract, amounting to \$100,949, to H. B. Nicholson, Los Angeles, for railroad construction, including grading, clearing and drainage, in California. The U. S. Engineer office, Sacramento, Calif., has awarded a contract, amounting to \$29,077, to R. Gould & Son and A. E. Downer, Stockton, Calif., for construction of railroad trackage in California.

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Official U. S. Army Photo

MOVING



Our railroads during 1943 transported more than ten million troops in special trains.

This FRONT LINE TRAFFIC was handled largely by steam motive power, which MUST be kept in service. Locomotives with old superheater units may have to "mark time" in roundhouses and back shops. Keep them on the "march" by having their old superheater units re-manufactured at our plant, where uncertainty of performance is eliminated.

SUPERHEATERS • FEEDWATER HEATERS
AMERICAN THROTTLES • STEAM DRYERS
EXHAUST STEAM INJECTORS • PYROMETERS

THE
SUPERHEATER
C O M P A N Y

Representative of
AMERICAN THROTTLE COMPANY, INC.
60 East 42nd Street, NEW YORK
122 S. Michigan Blvd., CHICAGO
Montreal, Canada
THE SUPERHEATER COMPANY, LTD.

March 4, 1944

Financial

ALTON.—*Trustee of Louisiana & Missouri.*—Henry A. Gardner, trustee of the Alton, with headquarters at Chicago, has been appointed by Federal Judge John P. Barnes trustee of the Louisiana & Missouri (part of the Alton), with the same headquarters.

ALTON.—*Reorganization.*—The District Court at Chicago, on February 28, granted the Alton an extension of time from February 29 to July 1 for filing a plan of reorganization. Attorneys for the railroad advised that the analysts making surveys and collecting material from which a plan can be formulated have been working since last August, but manpower shortages forced them to ask for additional time to complete their work. The railroad was also allowed until April 15 to file objections to any of the 500 claims filed by creditors.

ATLANTIC & NORTH CAROLINA.—*Promissory Notes.*—This road has applied to the Interstate Commerce Commission for authority to issue \$50,000 of 4 per cent promissory notes, sold at par to the First Citizens Bank & Trust Co. of Kinston, N. C., to be retired in annual installments over a 5-year period, the proceeds to be used to reimburse in part the road's treasury for the purchase of two diesel-electric locomotives in 1943.

CHESAPEAKE & OHIO.—*Equipment Trust Certificates.*—This company has applied to the Interstate Commerce Commission for authority to assume liability for \$2,200,000 of its serial equipment trust certificates of 1944, with a dividend rate not over 2½ per cent, to be issued in connection with the purchase from the Lima Locomotive Works of 10 Alleghany type freight locomotives of 2-6-6-6 wheel arrangement, with 25,000 gal. tenders, at a total cost of \$2,781,744.

CHESAPEAKE & OHIO.—*Preference Stock.*—This company has applied to the Interstate Commerce Commission for a reconsideration and rehearing of its application for authority to issue \$76,573,700 of preference stock as a stock dividend to its common stockholders. As noted in *Railway Age* of December 25, 1943, page 1022, Division 4 of the commission denied the application on the grounds that the purpose of the issue was not necessary or appropriate to the road's service to the public, and that it would not retain the required substantial uncanceled surplus after completing such a transaction. The application for further consideration asserted that the division erred in making such findings.

CHICAGO & NORTH WESTERN.—*Promissory Notes.*—This road has applied to the Interstate Commerce Commission for authority to issue \$1,894,500 of promissory notes in evidence of indebtedness under conditional sales contracts in connection with the purchase from the American Locomotive Company of 27 diesel-electric switching locomotives. Payment of the notes is to be made in monthly installments over a 5-year period, with interest at the rate of 1¾ per cent annually. At the same time this road has arranged for the purchase for cash of

5 similar locomotives; and the application indicated that 7 more would be ordered when allocations can be obtained.

GREAT NORTHERN.—*Promissory Notes.*—Division 4 of the Interstate Commerce Commission has authorized this road to issue a promissory note for \$1,501,438 in evidence of, but not in payment for, three 5,400-h.p. diesel-electric road freight locomotives, a part of an order for 13 to be built by the Electro-Motive Division of General Motors Corp. at a unit cost of \$500,479. The use of this power, as compared with steam locomotives to handle the same traffic in service over the Rocky Mountains, will result in operating savings estimated at about \$1,000,000 a year, according to the company's application. The bid of the Seattle-First National Bank, of Seattle, Wash., based on a 1½ per cent interest rate, was accepted for the note.

Under the purchase arrangement, delivery of these locomotives was scheduled prior to February 1; 2 others would be delivered in February, 5 more before July 1, and the remaining 3 before November 1. Separate conditional sales contracts would be executed for each lot, and the commission has deferred approval of the accompanying promissory notes pending completion of these arrangements.

PENNSYLVANIA.—*Preliminary Annual Report.*—The 1943 annual report of this company shows net income, after interest and other charges, of \$85,418,484, a decrease of \$16,050,309, as compared with the 1942 figure. Of this amount \$17,311,000 was applied to retirement of the company's debt (not including \$28,425,431 of leased lines' debt also retired), \$1,924,119 was transferred to sinking and other funds, \$32,919,385 went to stockholders in two dividends aggregating 5 per cent as in 1942, or \$2.50 a share, and the balance of \$33,263,930 was transferred to profit and loss. Selected items from the income statement follow:

	1943	Increase or Decrease Compared with 1942
RAILWAY OPERATING REVENUES	\$979,773,155	+\$141,298,532
TOTAL OPERATING EXPENSES	663,510,711	+109,369,984
NET REVENUE FROM OPERATIONS	316,262,444	+31,928,548
TAXES	180,405,491	+55,826,689
Railway Operating Income	135,856,953	-23,898,141
Hire of equipment and joint facility rents	8,310,542	-6,166,208
NET RAILWAY OPERATING INCOME	127,546,411	-17,731,933
Non-operating Income	42,503,518	+1,406,637
GROSS INCOME	170,049,929	-16,325,296
Fixed Charges (rentals paid to leased roads and interest on debt)	84,631,445	-274,987
NET INCOME	85,418,484	-16,050,309

WICHITA, CEDAR FALLS & NORTHERN.—*Reorganization.*—Division 4 of the Interstate Commerce Commission has authorized the distribution of securities to effect this road's reorganization according to the plan previously approved. At the same time, maximum limits of final allowances for compensation and expenses of the reorganization manager were approved. Hepburn & Norris and Swisher, Cohrt & Gilliland,

counsel, collectively were allowed \$12,500 for services; Russell Van Horn, reorganization manager, was allowed \$5,000 for services and \$1,219 for expenses; and certain other allocations were approved.

Average Prices Stocks and Bonds

	Feb. 29	Last week	1943
Average price of 20 representative railway stocks...	39.60	40.49	33
Average price of 20 representative railway bonds...	83.50	86.73	73

Dividends Declared

Boston & Albany.—Irregular, \$2.00, payable March 31 to holders of record February 29.

Erie & Pittsburgh.—Guaranteed, 87½¢ quarterly, payable March 10 to holders of record February 29. (Less 7½¢ for Pennsylvania state tax.)

European & North American.—\$2.50, semi-annually, payable April 3 to holders of record March 14.

Maine Central.—\$6.00, payable April 1 to holders of record March 27.

Philadelphia, Germantown & Norristown.—\$1.50, quarterly, payable March 4 to holders of record February 21.

Pittsburgh, Fort Wayne & Chicago.—\$1.175 preferred, \$1.75; payable April 1 and April 15, respectively, to holders of record March 10.

Reading.—2nd preferred, 50¢, quarterly, payable April 13 to holders of record March 23.

St. Louis, Rocky Mountain & Pacific.—Common (increased), \$2.00, payable March 10 to holders of record February 24.

Union Pacific.—Common, \$1.50, quarterly; 4th preferred, \$2.00, semi-annually; both payable April 1 to holders of record March 26.

Abandonments

CHICAGO, BURLINGTON & QUINCY.—Division 4 of the Interstate Commerce Commission, basing its finding in part on the ground that "we believe that we may take judicial notice of the progress of the war in Europe and of the possibility that it may end at reasonably early date," has authorized the road to abandon two lines in Iowa, one from Humeston to Clearfield, 58 miles, and one from Merle Junction to Clarinda, 27 miles, but has made the certificate effective one year from its date, so as not to work "undue hardship" on any affected communities that may experience difficulty in securing adequate truck service under wartime conditions. Jurisdiction was reserved for two years as to the protection of employees.

LEHIGH VALLEY.—This road has applied for Interstate Commerce Commission authority to abandon segments of two branch lines in Pennsylvania, one from Little Run Junction to Slatedale, 1.08 miles, and one from a point near Welshtown Junction to Welshtown, 1.44 miles.

NEW YORK CENTRAL.—Upon reconsideration, the Interstate Commerce Commission has affirmed its Division 4 order authorizing this company to abandon its 3.1-mile branch from Van Cortlandt Park Junction, N. Y., to Getty Square, Yonkers. (Further details are reported in the General News pages of this issue.)

ST. LOUIS & TROY.—By order of Commissioner Porter, the effective date of the Interstate Commerce Commission certificate authorizing this road's abandonment has been extended to March 20.

Railway Officers

EXECUTIVE

A. L. Smith, vice-president and general manager of the Tremont & Gulf, with headquarters at Winnfield, La., has been promoted to executive vice-president and general manager with the same headquarters.

W. W. Morrison has been appointed vice-president and general manager of the Pittsburg & Shawmut. He will also continue his duties as chief engineer of that company.

FINANCIAL, LEGAL AND ACCOUNTING

George L. Buland, eastern general counsel of the Southern Pacific at New York, whose appointment was announced



George L. Buland

in the *Railway Age* of February 26, is a graduate of Reed College and Columbia Law School. He was a partner of the law firm of Dey, Hampson & Nelson, now Hampson, Koerner, Young & Swett, of Portland, Ore., and came to New York



Charles L. Minor

in 1930 as assistant general counsel of the Southern Pacific. Mr. Buland is also president of the Pacific Fruit Express Com-

pany and a director and member of the executive committee of the St. Louis-Southwestern. **Charles L. Minor**, whose appointment as general attorney with headquarters at New York was also announced in the February 26 *Railway Age*, was graduated from the University of the South and from Columbia Law School. He has been a member of the legal staff of the Southern Pacific since 1924, serving in the capacity of attorney and later as assistant general attorney.

OPERATING

Hal R. Patterson has been appointed general livestock agent of the St. Louis-San Francisco (Frisco), with headquarters at Springfield, Mo., succeeding **Ralph McHam**, deceased.

J. A. Rogers, general superintendent of the Alberta district, Canadian National, has been appointed general superintendent of transportation Central region, with headquarters at Toronto, Ont. Mr. Rogers succeeds **J. W. Wardlaw**, whose promotion to chief of transportation was announced in last week's *Railway Age*.

J. R. Plunkett, assistant trainmaster of the Chicago & Western Indiana and the Belt Railway of Chicago, with headquarters at Chicago, has been advanced to superintendent of the Chicago & Western Indiana, with the same headquarters, succeeding **V. R. Walling**, whose promotion to assistant chief engineer of both roads is reported elsewhere in these columns.

T. R. Good, trainmaster of the Knoxville division of the Southern with headquarters at Knoxville, Tenn., has been appointed assistant superintendent of the division to succeed **B. L. Stanfiel**, promoted to superintendent of the Asheville division at Asheville, N. C. Mr. Stanfiel replaces **J. T. Moon**, whose transfer is reported elsewhere in these columns.

E. P. Evans, yardmaster of the Southern Pacific Lines in Texas and Louisiana at Hearne, Tex., has been promoted to trainmaster, with headquarters at Ennis, Tex., succeeding **R. E. Johnson**, who has been granted a leave of absence to enter military service. **J. W. Word**, train conductor, with headquarters at Victoria, Tex., has been advanced to trainmaster, with headquarters at Edinburg, Tex., replacing **C. D. Mayfield**, who has been assigned to other duties.

J. P. Mumford has been appointed trainmaster, Mobile division, of the Southern, with headquarters at Selma, Ala., succeeding **E. R. Oliver, Jr.**, who has been transferred to Birmingham, Ala. Mr. Oliver replaces **W. H. Oglesby**, who has been promoted to the position of assistant superintendent, Birmingham division, with headquarters at Sheffield, Ala., succeeding **O. K. Cameron**, retired after 54 years of service.

M. H. Ramsey, superintendent of the Blue Ridge Railway at Anderson, S. C., has been appointed superintendent of the Carolina and Northwestern and the Yadkin, with headquarters at Hockory, N. C. Mr. Ramsey succeeds **William M. Archer**, who retired on March 1, at his own request, after 46 years of railway service. **John W. Smith**,

dispatcher for the Blue Ridge Railway at Anderson, has been promoted to the position of superintendent, succeeding Mr. Ramsey.

Thomas J. Ward, whose appointment as general supervisor of terminals of the Baltimore & Ohio with headquarters at Baltimore, Md., was announced in the *Railway Age* of February 12, was born at



Thomas J. Ward

Lafayette, Ohio, on September 27, 1877. He entered the service of the Baltimore & Ohio in April, 1899, as freight brakeman at Cleveland, thereafter serving successively as freight conductor, yard conductor, assistant yardmaster, and yard conductor at that location. Mr. Ward was appointed safety agent to federal manager, Eastern lines, on September 1, 1918, becoming trainmaster at Connellsville, Pa., in December of that year. In February, 1919, he was named assistant trainmaster at Connellsville, and in June, 1922, was appointed general yardmaster. Mr. Ward became district supervisor of terminals at Baltimore in June, 1923, and recently assumed his new position of general supervisor of terminals, also at Baltimore.

Harry Babcock, whose appointment as general manager and traffic manager of the Pennsylvania-Reading Seashore and super-



Harry Babcock

intendent, Atlantic division, of the Pennsylvania, was announced in the *Railway Age* of February 19, was born at Steel-

4-8-8-4

Locomotive Characteristics

Weight on Drivers 540,000 Lb.
 Weight of Engine 762,000 Lb.
 Cylinders (Four) 23 $\frac{3}{4}$ x 32 Ins.
 Diameter of Drivers 68 Ins.
 Boiler Pressure 300 Lb.
 Tractive Power 135,375 Lb.
 Tender Capacity—Fuel 28 Tons
 Tender Capacity—Water 24,000 Gals.

4-6-6-4

Locomotive Characteristics

Weight on Drivers 404,000 Lb.
 Weight of Engine 627,000 Lb.
 Cylinders (Four) 21 x 32 Ins.
 Diameter of Drivers 69 Ins.
 Boiler Pressure 280 Lb.
 Tractive Power 97,350 Lb.
 Tender Capacity—Fuel 28 Tons
 Tender Capacity—Water 25,000 Gals.

4-8-4

Locomotive Characteristics

Weight on Drivers 270,080 Lb.
 Weight of Engine 483,000 Lb.
 Cylinders 25 x 32 Ins.
 Diameter of Drivers 80 Ins.
 Boiler Pressure 300 Lb.
 Tractive Power 63,800 Lb.
 Tender Capacity—Fuel 25 Tons
 Tender Capacity—Water 23,500 Gals.

1ST BUILT IN 1941

20 DELIVERED

5 MORE UNDER ORDER

1ST BUILT IN 1936

85 DELIVERED

20 MORE UNDER ORDER

1ST BUILT IN 1937

35 DELIVERED

10 MORE UNDER ORDER



175



AMERICAN LOCOMOTIVE



KEEPING PACE WITH THE NATION'S NEEDS

Upon the completion of the present orders, Alco will have delivered 175 modern, high-speed, high-powered steam locomotives to this road since 1936.

Manufacturers of Mobile Power Steam, Diesel and Electric Locomotives, Marine Diesels, Tanks, Gun Carriages and other Ordnance

manville, N. J. He entered the service of the West Jersey and Seashore (now Pennsylvania-Reading Seashore) in 1903 as a clerk, after which he served in various clerical and freight station posts until 1913, when he was appointed assistant stationmaster of the Pennsylvania's Camden terminal division. He was promoted to stationmaster the following year and became acting assistant trainmaster in 1917. In 1919, Mr. Babcock was named passenger trainmaster of the Maryland division of the Pennsylvania, and in February, 1941, he was promoted to superintendent of the Washington Terminal Company. He held that position until his recent appointment as general manager and traffic manager of the Pennsylvania-Reading Seashore and division superintendent of the Pennsylvania.

TRAFFIC

Harry A. Robertson, assistant freight traffic manager of the Denver & Rio Grande Western, with headquarters at Denver, Colo., has been promoted to assistant traffic manager, with headquarters at St. Louis, Mo., a newly-created position. **C. N. Gray**, general agent at St. Louis, has been transferred to Dallas, Tex. The position



Harry A. Robertson

of general agent at St. Louis has been abolished.

Mr. Robertson was born at Washington, Iowa, on December 15, 1891, and entered railway service with the St. Louis, Rocky Mountain & Pacific (now part of the Atchison, Topeka & Santa Fe), later going to the Western Railway Weighing Association. From 1912 to 1939 Mr. Robertson was employed by a number of business organizations in various parts of the country and in the latter year he went with the D. & R. G. W. as assistant freight traffic manager, the position he held at the time of his new appointment.

P. R. Medland has been named district freight agent of the Seaboard Air Line at Kansas City, Mo., succeeding **T. J. Barnes**, who has resigned.

Charles E. McCullough, assistant to the passenger traffic manager of the Pennsylvania with headquarters in Chicago, has been transferred to Philadelphia, Pa.

J. G. Miller has been appointed general agent of the St. Louis-San Francisco

(Frisco), with headquarters at San Antonio, Tex., succeeding **A. L. Shine**, who has been transferred to Houston, Tex.

Harry Sengstacken, general passenger agent of the Chicago, Milwaukee, St. Paul & Pacific has been promoted to assistant passenger traffic manager to succeed **William J. Cannon**, whose death on February 17 was reported in the *Railway Age* of February 26. Mr. Sengstacken has been succeeded by **Joseph Caldwell**, first assistant general passenger agent. The position of first assistant general passenger agent has been abolished. **Walter Peterson**, chief rate clerk, has been promoted to assistant to the passenger traffic manager. All have their headquarters in Chicago.

J. M. Strupper, freight traffic manager in charge of rates of the St. Louis-San Francisco (Frisco), with headquarters at St. Louis, Mo., has been promoted to assistant chief traffic officer, with the same headquarters, succeeding **Brooks H. Stanage**, whose death on February 4 was reported in the *Railway Age* of February 12. **H. P. Norden**, assistant freight traffic manager at St. Louis, has been advanced to freight traffic manager in charge of rates, replacing Mr. Strupper, and **G. L. Oliver**, assistant freight traffic manager, with headquarters at St. Louis, has been promoted to freight traffic manager of the Southern territory. **S. C. Inkley**, general freight agent at St. Louis, has been advanced to assistant freight traffic manager, relieving Mr. Oliver. **C. H. Rombach**, assistant general freight agent, has been promoted to general freight agent, with headquarters as before at St. Louis, succeeding Mr. Inkley.

Edward V. Murphy, general traffic agent of the New York, New Haven & Hartford, whose promotion to western traffic manager was announced in the *Railway Age* of January 8, was born at Fall River, Mass., on July 25, 1893. He entered railway service on the New York, New



Edward V. Murphy

Haven & Hartford in July, 1913, holding various positions in the freight traffic department of that road until 1917. After military service, he returned to the traffic department in 1918, and in March, 1922, became chief clerk to the general western freight agent at Pittsburgh, Pa. In August

of that year he was named traveling freight agent at the same location, and was appointed chief clerk to the western freight traffic manager at Chicago in 1924. Mr. Murphy was appointed commercial agent in 1925 and general agent the following year. In 1928 he became general western freight agent, and in 1935 was named general traffic agent at Chicago. This capacity he filled until his present appointment as western traffic manager.

MECHANICAL

George W. Dittmore, master car builder of the Delaware & Hudson, has been appointed superintendent of car equipment at Albany, N. Y. Mr. Dittmore's former position has been abolished.

Fred A. Baldinger, whose appointment as superintendent of motive power, Eastern region, of the Baltimore & Ohio with head-

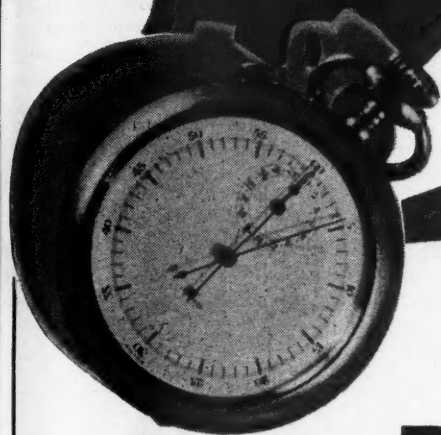


Fred A. Baldinger

quarters at Baltimore, Md., was announced in the *Railway Age* of January 15, was born at Crestline, Ohio, on August 23, 1881. After serving from 1903 until 1908 on the Pennsylvania, Mr. Baldinger joined the Washington Terminal as machinist and gang foreman, filling that post until 1912. He went with the Baltimore & Ohio in December, 1913, as assistant foreman of the Mt. Clare shop at Baltimore, being transferred to Holloway, Ohio, as engine house foreman in January, 1916. After serving as general foreman and assistant master mechanic at Holloway, he was promoted to master mechanic at Cassaway, W. Va., in March, 1919. Mr. Baldinger was transferred to Benwood, W. Va., in February, 1920, and to Baltimore in May, 1929, as master mechanic of the Wheeling and Baltimore divisions, respectively. He became district master mechanic at Baltimore on May 1, 1936, continuing in that position until his recent promotion to superintendent of motive power, Eastern region, with the same headquarters.

W. A. Langlands, master mechanic of the Galena division of the Chicago & North Western, with headquarters at Chicago, has been promoted to superintendent of Diesel and motor car equipment with the same headquarters, and has been succeeded by **R. Micel**, general foreman at Clinton, Iowa. **Orton Jones**, streamliner

Vital Seconds Saved



"HSC" BRAKE CONTROL

IN STOPPING DISTANCE

Four and one-half seconds are a lifetime under certain circumstances. For example, in this time, a modern high speed passenger train, at a 100 mile per hour speed, travels a distance of approximately 650 feet—almost an eighth of a mile.

That is why electric transmission, used with the "HSC" Brake Control Equipment, is regarded as vital to the operation of modern high speed trains. On a representative train of locomotive and 17 cars, four and one-half seconds represents the average time entailed for service pneumatic transmission of a brake application from the locomotive to the last car.

Electric Transmission is Instantaneous Throughout the Train

This means that braking pressure starts to develop on each car at the moment the engineman applies the brake. On a comparable basis of 17 cars and locomotive, maximum braking pressure is attained on the whole train through electric transmission in approximately the same time required for a purely pneumatic system to start pressure development on the last car.

IN MAKING SCHEDULES

"HSC" Control permits high speed train operation on close schedules by virtue of fast brake application and release contributed by electric transmission.

Running speed can be maintained longer when approaching restricted speed zones and resumed quickly on leaving.

On relatively short runs with a high proportion of slow zones it increases the average running speed between terminals and thus shortens the schedule.

On the other hand, for long runs where there is greater schedule latitude the average running speed can be maintained at a lower maximum running speed.

The VITAL SECONDS SAVED are a tremendous influence in shortening stops from high speeds.



WESTINGHOUSE AIR BRAKE CO.

WILMERDING, PENNSYLVANIA

March 4, 1944

47

electrician, has been promoted to Diesel supervisor for the system with headquarters at Chicago.

W. R. Sederquest has been appointed superintendent of steam locomotive maintenance of the New York, New Haven & Hartford, with headquarters at Boston, Mass. **Francis Whitaker** has been named superintendent of shops at Readville, Mass.

ENGINEERING & SIGNALING

Murray O. Cochrane, assistant superintendent of the Danville and Western Railway at Danville, Va., has been appointed assistant engineer maintenance of way of the Southern's subsidiary lines.

V. R. Walling, superintendent of the Belt Railway of Chicago and of the Chicago & Western Indiana, with headquarters at Chicago, has been promoted to assistant chief engineer of both roads, with the same headquarters, a newly-created position.

R. E. Farmer has been appointed division engineer of the Laurentian division, Canadian National, succeeding **W. F. Koehn**, whose promotion to assistant superintendent of the division was announced in the *Railway Age* of February 26.

PURCHASES AND STORES

E. A. Workman, whose appointment as purchasing agent of the Central of New Jersey at New York, was announced in the *Railway Age* of February 19, was born at Keyser, W. Va., and entered railway serv-

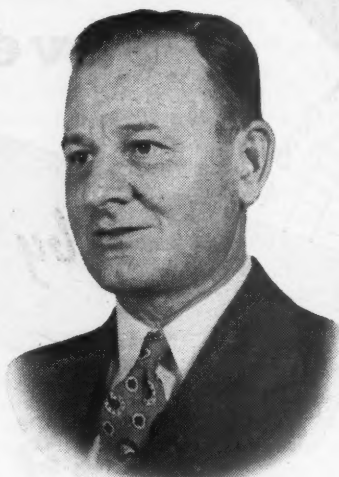


E. A. Workman

ice as a storekeeper of the Baltimore & Ohio at Keyser. He rose to the position of storekeeper of the Maryland district, and then joined the Central of New Jersey in July, 1926, as manager of purchases and stores. In January, 1934, Mr. Workman was appointed to the position of director of stores of New York City. He continued to hold that position for ten years until his recent return to the Central of New Jersey as purchasing agent with headquarters at New York.

Raymond D. Cummings, whose appointment as assistant purchasing agent of the Delaware & Hudson was announced in

the *Railway Age* of February 19, has been named to the position of purchasing agent with headquarters at Albany, N. Y., effective March 1. Mr. Cummings was born at Cohoes, N. Y., on March 1, 1893, and attended Albany Business College. He entered railroad service on May 1, 1912, with



Raymond D. Cummings

the Delaware & Hudson as a clerk. After active service in the U. S. Naval Reserve from July, 1917, to March, 1919, he returned to the D. & H. on April 1, 1919. Mr. Cummings was named assistant chief clerk on January 1, 1930, and was promoted to chief clerk in April, 1937. He was assistant purchasing agent from February 1 of this year until his present appointment as purchasing agent at Albany.

SPECIAL

James A. Nichols, assistant superintendent of the Indiana division of the Cleveland, Cincinnati, Chicago & St. Louis (Big Four), with headquarters at Indianapolis, Ind., has resigned to become manager of the Cincinnati Union Terminal Company, succeeding **Wilbur Kellogg**, who has resigned to accept the position of city manager of Cincinnati, Ohio.

OBITUARY

Herbert Nash Morris, assistant general freight agent of the Seaboard Air Line, died on February 21 at Norfolk, Va. He was 61 years old.

John Rolley Gould, assistant to superintendent of motive power of the Chesapeake & Ohio, died on February 19 at Richmond, Va. He was 74 years old.

J. C. Hassett, assistant to general mechanical superintendent of the New York, New Haven & Hartford with headquarters at New Haven, Conn., died on February 29 at New Haven, at the age of 62.

Ward H. Henderson, inspector of service of the Western region of the Pennsylvania, and assistant trainmaster of the Toledo division, with headquarters at Detroit, Mich., died in a hospital in that city on February 2, after 51 years service.

John G. Brennan, assistant to the vice-president, improvements and development,

of the New York Central System, and engineer of grade crossings and secretary of the grade crossings committee, operations and maintenance department, of the Association of American Railroads, died at his home at Washington, D. C., on February 23. Mr. Brennan, who was born at Syracuse, N. Y., on February 14, 1884, was graduated from Syracuse University. He entered the service of the New York Central in 1906 as a chainman, and much of his subsequent career was with that company. He was engineer of grade crossings for eight years prior to 1935, when he was transferred to the Association of American Railroads as engineer of grade crossings and secretary of the grade crossings committee, operations and maintenance depart-



John G. Brennan

ment. In January, 1942, Mr. Brennan rejoined the New York Central as assistant to the vice-president, improvements and development at Washington, also retaining his position on the A. A. R. In this capacity he continued until his recent death.

TEN THOUSAND instances of damage by the enemy have been reported on British railways and London Transport property since the start of the war, according to Modern Transport (London). Holding the record for the most bombed section of line is a 3½-mile stretch of track near Coventry, which suffered 40 high explosive bombs in one night. In the city proper, with 600 incidents reported, 122 were on railroad property, yet in less than 48 hours following the attack, railway forces had cleared two main routes, and within two weeks, all routes again were operating normally. The most bombed track in London—2½ miles long—was attacked 92 times in 9 months.

TWO BILLION TOKENS:—Distribution of the new O. P. A. ration tokens has been assigned almost exclusively to Railway Express. Now underway, this handling represents one of the largest shipping operations of its kind, involving movement from the factory, in southwestern Ohio, to ration "banks" throughout the country. Two billion tokens, weighing 1,100 tons, are being forwarded to 14,000 destinations, at the rate of between 40,000,000 and 50,000,000 tokens a day. As approximately 100 fully loaded containers can be placed in the average express car, the movement will total 140 carloads, or the equivalent of 10 full passengers trains of 14 cars each.

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Valve Bull Rings
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Hub Liners
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Floating Rod Bushings

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for Cylinders and Valves
(Duplex Springs for Above
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Operating Revenues and Operating Expenses of Class I Steam Railways

Compiled from 133 monthly reports of revenues and expenses representing 136 Class I steam railways
(SWITCHING AND TERMINAL COMPANIES NOT INCLUDED)
FOR THE MONTH OF DECEMBER, 1943 AND 1942

Item	United States		Eastern District		Southern District		Western District	
	1943	1942	1943	1942	1943	1942	1943	1942
Miles of road operated at close of month.....	229,085	229,604	56,150	56,454	43,389	43,495	129,546	129,655
Revenues:								
Freight.....	\$571,387,288	\$531,918,083	\$214,742,847	\$200,906,216	\$108,916,917	\$104,480,482	\$247,727,524	\$226,531,385
Passenger.....	151,548,201	119,150,730	58,627,447	49,134,265	31,800,321	24,303,559	61,120,433	45,712,906
Mail.....	14,352,620	13,100,174	4,726,281	4,519,365	2,636,363	2,308,939	6,989,976	6,271,870
Express.....	11,048,991	11,140,498	3,108,906	3,509,143	1,665,674	1,554,951	6,274,411	6,076,404
All other operating revenues.....	33,421,914	27,685,787	12,335,400	11,689,080	6,450,989	3,830,799	14,635,525	12,165,908
Railway operating revenues.....	781,759,014	702,995,272	293,540,881	269,758,069	151,470,264	136,478,730	336,747,869	296,758,473
Expenses:								
Maintenance of way and structures.....	132,586,685	72,915,079	44,367,436	25,118,765	19,964,336	14,735,134	68,254,913	33,061,180
Maintenance of equipment.....	153,151,232	110,841,640	57,695,237	46,883,007	28,741,930	21,578,002	66,714,065	42,380,631
Traffic.....	13,358,248	10,582,445	4,550,701	3,831,852	2,727,114	2,054,219	6,080,433	4,696,374
Transportation—Rail line.....	263,476,548	214,444,330	110,254,665	95,951,733	44,710,521	36,397,008	108,511,362	82,095,589
Transportation—Water line.....	644	1,290	.....	.....	.....	.....	644	1,290
Miscellaneous operations.....	10,775,621	8,342,626	3,497,433	3,099,539	1,610,773	1,356,800	5,667,415	3,886,287
General.....	21,540,702	14,778,698	8,556,439	6,014,412	4,667,812	2,869,115	8,316,451	5,895,171
Railway operating expenses.....	**594,889,680	431,906,106	228,921,911	180,839,308	102,422,486	78,990,278	263,545,283	172,016,522
Net revenue from railway operations.....	185,869,334	271,089,164	64,618,970	88,858,761	49,047,778	57,488,452	73,202,586	124,741,951
Railway tax accruals.....	96,325,067	80,016,821	26,612,938	17,497,332	28,696,073	17,282,142	41,016,056	45,237,347
Railway operating income.....	90,544,267	191,072,343	38,005,032	71,361,429	20,351,705	40,206,310	32,185,530	79,504,604
Equipment rents—Dr. balance.....	10,854,094	12,056,388	4,873,592	3,865,533	654,473	979,238	5,326,029	7,211,617
Joint facility rent—Dr. balance.....	2,763,025	4,636,077	1,410,279	2,145,192	423,846	416,342	928,900	2,074,543
Net railway operating income.....	76,927,148	174,379,878	31,722,161	65,350,704	19,273,385	38,810,730	25,931,601	70,218,444
Ratio of expenses to revenue (percent).....	76.1	61.4	78.0	67.1	67.6	57.9	78.3	58.0
Depreciation—Way and structures.....	8,685,226	3,351,712	3,888,689	2,087,846	1,266,820	383,269	3,529,717	880,597
Deferred maintenance—Way and structures.....	12,198,099	4,175,714	912,577	49,361	d 12,751	91,276	11,298,273	4,035,077
Amortization of Defense Projects—Road.....	1,887,050	818,046	436,658	226,644	269,570	169,048	1,189,822	431,354
Depreciation—Equipment.....	17,400,701	15,574,861	6,942,826	6,853,505	3,610,674	2,680,742	6,847,201	6,040,614
Amortization of Defense projects—Equipment.....	15,009,806	14,409,017	6,021,474	4,921,040	2,943,574	4,855,012	6,044,758	4,632,965
Deferred Maintenance—Equipment.....	4,946,454	872,173	5,332	30,000	d 5,191	67,722	4,946,313	774,451
Major repairs—Equipment.....	1,453,825	.....	.....	.....	.....	.....	1,453,825	.....
Pay roll taxes.....	22,452,480	15,483,231	8,952,538	6,621,052	4,243,853	2,767,368	9,246,089	6,094,811
Federal income taxes†.....	51,912,547	42,588,737	8,493,650	1,451,894	19,534,372	9,777,297	23,884,525	31,359,549
All other taxes.....	21,960,040	21,944,853	9,156,750	9,424,386	4,917,848	4,737,477	7,885,442	7,782,990

FOR TWELVE MONTHS ENDED WITH DECEMBER, 1943 AND 1942

Item	United States		Eastern District		Southern District		Western District	
	1943	1942	1943	1942	1943	1942	1943	1942
Miles of road operated at close of month.....	229,256	230,836	56,275	56,707	43,430	43,747	129,551	130,382
Revenues:								
Freight.....	\$6,782,463,421	\$5,944,742,473	\$2,639,352,174	\$2,390,017,653	\$1,289,057,508	\$1,155,960,659	\$2,854,053,739	\$2,398,764,161
Passenger.....	1,652,867,958	1,028,185,625	664,953,157	467,756,830	336,785,283	200,813,778	651,129,518	359,615,017
Mail.....	125,050,636	111,377,031	43,007,750	40,211,110	22,762,980	19,906,093	59,279,906	51,259,828
Express.....	127,816,692	96,869,122	44,155,636	35,159,558	18,102,354	15,180,058	65,558,702	46,529,506
All other operating revenues.....	366,525,672	285,052,803	157,286,718	129,597,888	50,433,703	37,114,761	158,805,251	118,340,154
Railway operating revenues.....	9,054,724,379	7,466,227,054	3,548,755,435	3,062,743,039	1,717,141,828	1,428,975,349	3,788,827,116	2,974,508,666
Expenses:								
Maintenance of way and structures.....	1,106,871,499	796,418,555	420,271,585	318,396,072	185,638,445	140,239,056	500,961,469	337,783,427
Maintenance of equipment.....	1,439,437,510	1,211,083,968	605,896,783	535,829,528	267,903,655	232,971,843	565,637,072	442,282,597
Traffic.....	129,241,650	117,776,053	46,673,343	42,854,752	24,813,408	23,033,250	57,754,899	51,888,051
Transportation—Rail line.....	2,684,505,923	2,241,990,054	1,196,039,238	1,013,797,345	451,397,641	380,727,815	1,037,069,044	847,464,894
Transportation—Water line.....	8,928	733	.....	.....	.....	.....	8,928	733
Miscellaneous operations.....	106,670,380	75,893,636	37,841,203	29,629,294	16,865,033	12,132,471	51,964,144	34,131,871
General.....	186,462,876	158,301,518	75,271,376	63,779,559	36,955,652	30,526,713	74,235,848	63,995,246
Railway operating expenses.....	f 5,653,198,766	4,601,463,051	2,381,993,528	2,004,286,550	983,573,834	819,631,148	2,287,631,404	1,777,545,353
Net revenue from railway operations.....	3,401,525,613	2,864,764,003	1,166,761,907	1,058,456,489	733,567,994	609,344,201	1,501,195,712	1,196,963,313
Railway tax accruals.....	1,851,235,248	1,198,881,298	598,910,036	436,682,844	447,050,663	304,150,728	805,274,549	458,047,726
Railway operating income.....	1,550,290,365	1,665,882,705	567,851,871	621,773,645	286,517,331	305,193,473	695,921,164	738,915,587
Equipment rents—Dr. balance.....	148,329,235	141,022,065	61,724,326	64,343,319	8,511,288	8,262,133	78,093,621	68,416,613
Joint facility rent—Dr. balance.....	39,985,006	40,390,989	20,055,267	20,697,793	4,967,748	4,365,405	14,961,991	15,327,791
Net railway operating income.....	1,361,976,124	1,484,469,651	486,072,278	536,732,533	273,038,295	292,565,935	602,865,551	655,171,183
Ratio of expenses to revenue (percent).....	62.4	61.6	67.1	65.4	57.3	57.4	60.4	59.8
Depreciation—Way and structures.....	105,377,059	40,798,438	45,395,891	24,999,250	17,501,869	5,752,572	42,479,299	10,046,616
Deferred maintenance—Way and structures.....	13,888,806	5,759,912	1,303,390	216,166	d 91,276	91,276	12,676,692	5,452,470
Amortization of Defense projects—Road.....	11,322,858	4,475,616	3,678,356	1,274,456	1,995,539	672,283	5,648,963	2,528,877
Depreciation—Equipment.....	210,584,818	205,453,286	88,861,335	88,257,299	43,022,502	40,833,302	78,700,981	76,362,685
Amortization of Defense projects—Equipment.....	134,259,840	87,483,210	47,828,773	29,234,194	30,967,399	25,140,472	55,463,668	33,108,544
Deferred maintenance—Equipment.....	4,971,776	1,727,076	32,000	30,000	d 67,722	67,722	5,007,498	1,629,354
Major repairs—Equipment.....	3,078,825	.....	.....	.....	.....	.....	3,078,825	.....
Pay roll taxes.....	211,303,257	171,049,347	90,280,249	74,481,285	36,324,964	30,144,726	84,698,044	66,423,336
Federal income taxes†.....	1,337,496,802	755,373,016	376,541,073	244,280,757	350,293,451	218,095,029	610,662,278	292,997,230
All other taxes.....	302,435,189	272,458,935	132,088,714	117,920,802	60,432,248	55,910,973	109,914,227	98,627,160

* Represents an average of the mileage reported at the close of each month within the period.

** Includes \$77,268,059 accrued on account of major wage awards.

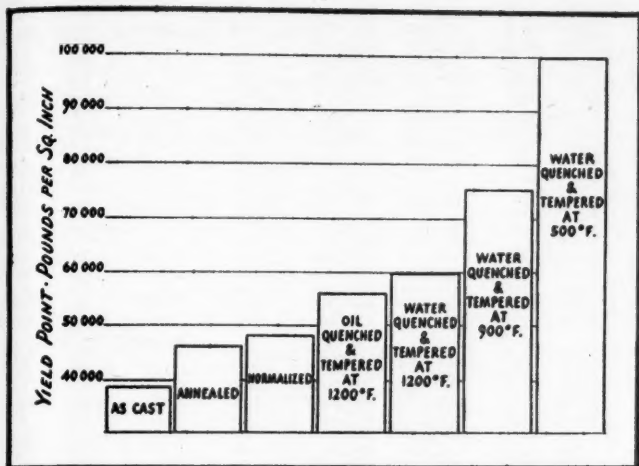
† Includes income tax, surtax, and excess-profits tax.

d Decrease, deficit, or other reverse items.

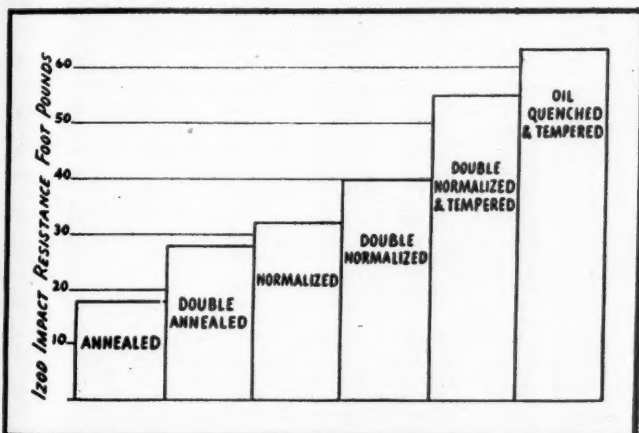
f Includes \$214,784,787 accrued on account of major wage awards.

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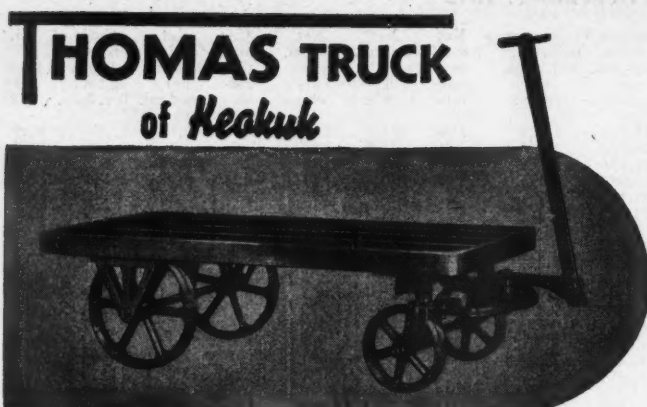
Freight Operating Statistics of Large Steam Railways—Selected Items

Region, road, and year	Miles of road operated	Train-miles	Locomotive-miles		Car-miles		Ton-miles (thousands)		Road locos. on line					
			Principal and helper	Light	Loaded (thousands)	Per cent loaded	Gross excl. locos. & tenders	Net rev. and non-rev.	Serviceable		B. O.	Per cent B. O.		
									Unstored	Stored				
New England Region:														
Boston & Albany.....	1943	362	162,258	199,364	32,648	4,096	59.8	278,922	114,418	79	..	15	16.0	
	1942	362	170,481	206,947	39,000	4,035	59.5	282,681	119,665	72	..	22	23.4	
Boston & Maine.....	1943	1,807	398,093	457,049	47,053	13,718	67.6	884,572	389,109	153	..	20	11.6	
	1942	1,812	403,759	473,735	54,713	12,398	64.2	849,311	383,238	164	..	16	8.9	
N. Y., New H. & Hartf.†.....	1943	1,815	544,335	665,144	59,456	18,960	68.6	1,176,807	525,357	234	1	34	15.9	
	1942	1,816	479,763	603,664	56,394	16,155	66.5	1,039,262	467,342	231	6	29	18.0	
Great Lakes Region:														
Delaware & Hudson.....	1943	848	333,807	416,771	36,367	14,223	67.5	1,001,641	524,626	151	37	33	14.9	
	1942	848	344,704	425,239	38,769	12,684	65.5	943,408	504,456	148	38	33	15.1	
Del., Lack. & Western.....	1943	971	372,180	445,219	75,381	16,249	69.1	1,072,885	512,914	155	11	33	16.6	
	1942	982	363,720	432,970	64,753	14,658	67.3	990,966	475,234	144	12	25	13.8	
Erie.....	1943	2,244	1,029,965	1,111,143	81,340	45,380	65.6	3,016,596	1,353,639	326	..	72	18.1	
	1942	2,242	911,705	981,780	74,093	37,721	66.5	2,511,031	1,138,155	307	12	72	18.4	
Grand Trunk Western.....	1943	1,026	273,587	288,812	2,529	8,368	69.5	535,979	245,437	73	2	8	9.6	
	1942	1,026	266,426	281,055	2,198	7,941	64.7	533,478	236,058	68	4	7	8.9	
Lehigh Valley.....	1943	1,248	504,585	559,449	82,719	20,293	62.4	1,444,453	690,360	154	..	13	7.8	
	1942	1,248	475,859	520,307	82,491	18,586	61.5	1,331,021	630,330	144	..	13	8.3	
New York Central.....	1943	10,326	3,872,341	4,165,309	266,914	141,134	62.0	10,041,582	4,678,574	1,212	8	210	14.7	
	1942	10,470	3,648,304	3,985,889	263,177	126,835	60.1	9,294,411	4,328,121	1,210	2	198	14.0	
New York, Chi. & St. L.....	1943	1,657	865,802	883,389	11,428	32,134	67.4	2,100,896	959,834	161	..	16	9.0	
	1942	1,657	895,961	907,459	11,068	31,480	62.7	2,203,192	1,006,078	167	..	13	7.2	
Pere Marquette.....	1943	1,945	477,201	494,470	11,605	14,887	65.5	1,025,448	494,105	145	1	21	12.6	
	1942	1,998	464,402	493,510	12,116	13,483	65.5	938,772	451,682	137	5	19	11.8	
Pitts. & Lake Erie.....	1943	229	95,754	100,669	103	3,852	63.0	333,089	194,256	35	..	8	18.6	
	1942	233	90,106	94,759	58	3,585	61.1	317,408	184,306	38	5	11	20.4	
Wabash.....	1943	2,381	730,940	753,253	18,032	26,288	72.8	1,683,327	804,294	179	7	37	16.6	
	1942	2,381	797,807	823,815	18,620	26,915	63.4	1,854,045	834,286	186	7	31	13.8	
Central Eastern Region:														
Baltimore & Ohio.....	1943	6,109	2,415,157	2,970,525	298,530	77,826	63.1	5,663,253	2,778,038	950	1	196	17.1	
	1942	6,116	2,436,197	3,009,830	354,251	72,743	59.4	5,457,044	2,583,029	937	7	190	16.8	
Central of New Jersey†.....	1943	654	234,270	277,270	64,905	8,056	60.4	590,283	291,707	134	6	15	9.7	
	1942	658	264,518	305,242	66,935	7,992	59.6	609,715	310,406	124	5	22	14.6	
Chicago & Eastern Ill.....	1943	912	326,388	335,418	11,724	9,439	57.8	692,813	311,436	80	..	6	7.0	
	1942	912	241,605	266,270	10,379	7,392	68.3	494,935	241,146	62	..	12	16.2	
Elgin, Joliet & Eastern.....	1943	392	131,933	136,014	3,615	3,581	64.3	285,991	154,961	60	..	16	21.1	
	1942	392	146,396	149,521	2,418	3,628	62.1	295,437	158,721	72	..	8	10.0	
Long Island.....	1943	372	35,833	37,179	14,520	371	55.4	28,106	11,942	43	..	6	12.2	
	1942	374	35,165	36,644	20,912	322	53.6	25,324	10,650	47	..	4	7.8	
Pennsylvania System.....	1943	9,914	4,598,284	5,372,655	698,314	171,561	63.6	12,220,911	5,936,202	2,000	..	175	8.0	
	1942	9,933	4,469,565	5,284,112	711,563	152,896	61.6	11,066,263	5,298,305	1,932	..	167	8.0	
Reading.....	1943	1,416	573,173	646,625	83,386	18,340	65.0	1,402,756	757,109	268	9	43	13.4	
	1942	1,419	618,038	689,729	77,254	18,033	61.6	1,422,910	762,877	277	7	41	12.6	
Pocahontas Region:														
Chesapeake & Ohio.....	1943	3,033	1,175,501	1,285,491	62,113	49,465	55.9	4,318,198	2,427,152	479	1	43	8.2	
	1942	3,032	1,080,058	1,170,900	56,220	42,626	55.1	3,720,747	2,054,749	468	3	51	9.8	
Norfolk & Western.....	1943	2,132	847,170	920,265	74,328	36,226	58.7	3,193,531	1,735,343	300	10	20	6.1	
	1942	2,134	826,505	890,210	65,442	33,005	56.8	2,918,435	1,575,144	312	6	15	4.5	
Southern Region:														
Atlantic Coast Line.....	1943	4,953	1,041,637	1,064,850	14,821	27,285	60.4	1,871,853	801,923	360	5	27	6.9	
	1942	4,982	1,043,368	1,072,743	12,978	26,316	60.9	1,824,341	799,980	348	9	26	6.8	
Central of Georgia†.....	1943	1,783	343,574	351,856	5,460	7,998	71.2	520,070	244,522	100	..	11	9.9	
	1942	1,783	325,065	329,789	5,686	6,951	63.9	470,269	211,281	104	..	11	9.6	
Gulf, Mobile & Ohio.....	1943	1,962	303,207	376,072	1,125	10,393	73.9	665,190	328,662	115	1	9	7.2	
	1942	1,959	374,740	466,355	5,229	11,355	66.2	780,541	380,309	109	..	12	9.9	
Illinois Central (incl. Yazoo & Miss. Vy).....	1943	6,347	1,737,805	1,752,461	32,164	64,427	63.7	4,525,985	2,145,071	627	..	67	9.7	
	1942	6,366	1,857,375	1,873,441	37,611	61,996	59.7	4,585,233	2,137,520	628	..	61	8.9	
Louisville & Nashville.....	1943	4,736	1,647,332	1,795,670	50,748	41,682	63.8	2,998,988	1,523,268	435	2	50	10.3	
	1942	4,735	1,606,481	1,752,185	45,645	37,110	60.1	2,793,561	1,411,258	433	4	44	9.1	
Seaboard Air Line*.....	1943	4,165	957,913	1,133,924	12,840	27,021	66.4	1,805,823	804,215	318	..	35	9.9	
	1942	4,171	984,264	1,088,281	12,141	24,522	64.9	1,692,502	775,366	300	..	23	7.1	
Southern.....	1943	6,479	2,241,218	2,288,951	34,365	49,684	68.3	3,234,348	1,502,820	606	..	86	12.4	
	1942	6,478	2,116,549	2,162,932	29,206	42,877	64.1	2,923,844	1,324,422	581	..	88	13.2	
Northwestern Region:														
Chi. & North Western†.....	1943	8,098	1,074,271	1,133,489	26,603	33,655	68.7	2,251,895	1,060,132	385	22	97	19.2	
	1942	8,098	1,047,230	1,098,471	25,264	30,485	63.1	2,147,472	960,278	374	38	85	17.1	
Chicago Great Western.....	1943	1,445	297,224	302,937	13,336	9,255	71.6	608,513	282,934	73	..	7	8.8	
	1942	1,447	299,578	307,114	7,027	8,304	63.3	574,561	242,910	77	..	5	6.1	
Chi., Milw., St. P. & Pac.†.....	1943	10,734	1,559,966	1,660,439	75,587	51,017	70.2	3,376,769	1,649,313	524	44	68	10.7	
	1942	10,813	1,543,994	1,639,436	78,901	44,769	64.5	3,160,854	1,508,686	508	55	60	9.6	
Chi., St. P., Minneap. & Om.....	1943	1,606	227,845	244,298	13,572	5,826	70.0	394,386	185,502	95	29	6	4.6	
	1942	1,618	235,419	254,291	12,276	5,620	65.3	390,560	180,765	99	18	14	10.7	
Duluth, Missabe & I. R.....	1943	544	40,055	40,098	1,959	1,202	56.3	94,063	53,426	24	9	17	34.0	
	1942	545	31,373	31,464	1,989	651	58.8	44,432	24,037	19	12	12	27.9	
Great Northern.....	1943	8,278	1,303,422	1,308,052	56,891	45,418	70.2	3,112,618	1,520,543	410	13	55	11.5	
	1942	8,029	1,156,610	1,157,382	42,456	39,923	70.9	2,702,625	1,303,388	404	12	72	14.8	
Minneap., St. P. & S. St. M.†.....	1943	4,258	502,095	519,313	10,372	12,716	68.0	871,557	427,053	136	3	7	4.8	
	1942	4,258	453,248	461,585	6,891	10,572	65.1	718,487	333,600	133	8	4	2.8	
Northern Pacific.....	1943	6,571	987,975	1,058,163	84,863	39,573	75.7	2,652,531	1,394,663	381	16	47	10.6	
	1942	6												

for the Month of December, 1943, Compared with December, 1942

Freight cars on line

Region, road, and year	Freight cars on line			Per Cent B. O.	G.t.m. per train-hr. excl. locos. and tenders	G.t.m. per train-mi. excl. locos. and tenders	Net ton-mi. per train-mile	Net ton-mi. per l'd. car-mile	Net ton-mi. per car-day	Car miles per car-day	Net daily ton-mi. per road-mi.	Coal lb. per 1000 g.t.m. inc. loco.	Mi. per loco. per day
	Home	Foreign	Total										
New England Region:													
Boston & Albany.....1943	310	7,628	7,938	0.2	21,582	1,725	708	27.9	532	31.9	10,196	206	92.1
1942	373	5,009	5,382	.4	25,778	1,664	704	29.7	688	39.0	10,663	176	92.9
Boston & Maine.....1943	2,095	11,030	13,125	2.6	32,856	2,229	980	28.4	945	49.2	6,946	103	98.0
1942	2,921	10,976	13,897	1.8	31,083	2,115	954	30.9	934	47.1	6,823	113	100.5
N. Y., New H. & Hartf.†.....1943	3,034	22,359	25,393	2.5	31,108	2,196	981	27.7	652	34.3	9,337	112	93.4
1942	3,664	17,910	21,574	1.3	31,103	2,200	989	28.9	718	37.3	8,302	110	87.4
Great Lakes Region:													
Delaware & Hudson.....1943	3,422	5,917	9,339	1.8	47,997	3,016	1,580	36.9	1,778	71.4	19,957	115	69.7
1942	5,441	4,653	10,094	2.7	42,532	2,749	1,470	39.8	1,544	59.3	19,190	114	70.1
Del., Lack. & Western.....1943	5,785	12,762	18,547	2.9	40,994	2,914	1,393	31.6	895	41.0	17,040	136	89.6
1942	7,665	11,057	18,722	2.6	43,340	2,755	1,321	32.4	862	39.5	15,611	123	90.7
Erie.....1943	10,913	28,251	39,164	2.2	47,731	2,941	1,320	29.8	1,129	57.7	19,459	109	103.8
1942	13,294	22,951	36,245	2.2	46,214	2,772	1,256	30.2	1,036	51.6	16,376	107	94.1
Grand Trunk Western.....1943	2,289	5,655	7,944	3.7	40,675	1,970	902	29.3	959	47.0	7,717	102	119.7
1942	2,499	6,686	9,185	3.0	40,446	2,020	894	29.7	821	42.7	7,422	88	123.2
Lehigh Valley.....1943	6,520	20,842	27,362	1.7	46,995	2,978	1,423	34.0	841	39.6	17,844	120	130.1
1942	9,005	18,090	27,095	1.6	45,324	2,909	1,378	33.9	729	34.9	16,293	122	130.9
New York Central.....1943	45,910	123,941	169,851	2.5	37,790	2,633	1,227	33.1	940	45.7	14,616	114	110.8
1942	54,784	88,746	143,530	2.8	38,239	2,586	1,204	34.1	994	48.4	13,335	110	108.7
New York, Chi. & St. L.....1943	2,594	12,925	15,519	1.9	43,791	2,445	1,117	29.9	1,929	95.7	18,686	97	171.9
1942	4,058	14,390	18,448	1.6	41,863	2,472	1,128	31.9	1,808	90.2	19,586	97	172.9
Pere Marquette.....1943	2,499	7,568	10,067	2.7	37,741	2,183	1,052	33.2	1,414	65.1	8,195	98	105.2
1942	4,375	7,551	11,926	2.2	34,133	2,081	1,001	33.5	1,257	57.3	7,292	100	108.5
Pitts. & Lake Erie.....1943	2,833	8,487	11,320	3.5	47,080	3,484	2,032	50.4	488	15.4	27,364	102	75.7
1942	4,931	7,536	12,467	4.7	45,086	3,535	2,053	51.4	474	15.1	25,517	102	60.2
Wabash.....1943	6,012	11,706	17,718	1.7	43,625	2,323	1,110	30.6	1,514	68.0	10,897	115	116.3
1942	7,994	13,714	21,708	1.0	40,973	2,349	1,057	31.0	1,252	63.7	11,303	122	125.9
Central Eastern Region:													
Baltimore & Ohio.....1943	37,392	56,293	93,685	3.0	27,008	2,402	1,178	35.7	913	40.6	14,669	166	97.0
1942	45,245	45,782	91,027	2.2	27,467	2,293	1,085	35.5	919	43.6	13,624	162	100.2
Central of New Jersey†.....1943	4,484	21,800	26,284	1.7	27,071	2,551	1,261	36.2	358	16.4	14,388	159	95.3
1942	7,793	18,607	26,400	.8	29,144	2,340	1,191	28.8	408	17.6	15,217	148	103.0
Chicago & Eastern Ill.....1943	2,092	5,940	8,032	3.0	35,026	2,184	982	33.0	1,274	66.8	11,016	124	133.8
1942	2,164	4,772	6,936	3.3	33,893	2,199	1,071	32.6	1,225	55.0	8,529	133	128.3
Elgin, Joliet & Eastern.....1943	8,979	6,808	15,787	3.4	16,422	2,279	1,235	43.3	310	11.1	12,752	147	88.9
1942	8,756	9,492	18,248	2.9	15,432	2,125	1,142	43.7	278	10.2	13,061	160	95.0
Long Island.....1943	42	4,465	4,507	.7	6,074	801	340	32.2	81	4.5	1,036	320	49.0
1942	32	3,781	3,813	.8	5,754	730	307	33.1	86	4.8	919	380	49.3
Pennsylvania System.....1943	123,758	126,008	249,766	2.7	33,879	2,745	1,333	34.6	780	35.4	19,315	140	98.0
1942	137,452	113,674	251,126	2.3	30,604	2,558	1,225	34.7	688	32.2	17,207	135	99.4
Reading.....1943	11,638	27,868	39,506	1.5	28,480	2,453	1,324	41.3	645	24.0	17,248	138	82.2
1942	17,967	19,006	36,973	3.0	29,272	2,309	1,238	42.3	670	25.7	17,342	134	86.0
Pocahontas Region:													
Chesapeake & Ohio.....1943	33,753	15,784	49,537	.9	49,315	3,755	2,111	49.1	1,514	55.3	25,814	92	93.0
1942	34,803	11,922	46,725	.7	47,404	3,525	1,947	48.2	1,319	49.7	21,861	90	85.1
Norfolk & Western.....1943	34,160	7,081	41,241	1.3	57,776	3,846	2,090	47.9	1,402	49.8	26,256	103	105.5
1942	33,732	6,428	40,160	1.2	53,967	3,604	1,945	47.7	1,275	47.0	23,810	104	97.8
Southern Region:													
Atlantic Coast Line.....1943	8,253	23,131	31,384	2.6	27,762	1,811	776	29.4	844	47.5	5,223	124	95.5
1942	9,513	19,847	29,360	2.4	27,677	1,756	770	30.4	916	49.5	5,180	114	99.4
Central of Georgia†.....1943	1,680	6,402	8,082	1.4	28,151	1,522	716	30.6	927	42.6	4,424	131	112.5
1942	2,567	5,235	7,802	1.2	25,809	1,463	657	30.4	809	41.6	3,822	130	101.9
Gulf, Mobile & Ohio.....1943	2,192	6,590	8,782	.5	38,479	2,203	1,088	31.6	1,149	49.1	5,404	120	102.6
1942	2,770	6,174	8,944	1.1	37,348	2,098	1,022	33.5	1,323	59.7	6,262	122	129.3
Illinois Central (incl. Yazoo & Miss. V'y).....1943	19,919	34,723	54,642	.6	42,114	2,673	1,267	33.3	1,320	62.3	10,902	128	87.2
1942	22,592	31,386	53,978	.8	39,020	2,523	1,176	34.5	1,289	62.7	10,831	124	94.7
Louisville & Nashville.....1943	31,270	16,104	47,374	2.1	25,661	1,821	925	36.5	1,070	45.9	10,375	145	128.9
1942	34,263	16,043	50,306	1.6	24,781	1,739	878	38.0	921	40.3	9,614	142	125.5
Seaboard Air Line*.....1943	6,695	21,350	28,045	1.0	29,821	1,919	855	29.8	959	48.5	6,229	127	114.8
1942	8,080	18,365	26,445	1.8	26,731	1,768	810	31.6	956	46.6	5,997	129	121.9
Southern.....1943	15,625	30,249	45,874	1.7	24,001	1,467	682	30.2	1,059	51.3	7,482	154	114.3
1942	18,763	30,970	49,733	1.8	22,650	1,402	635	30.9	885	44.7	6,595	156	111.0
Northwestern Region:													
Chi. & North Western†.....1943	20,717	33,680	54,397	4.1	32,867	2,170	1,022	31.5	651	30.1	4,223	133	79.7
1942	24,452	31,731	56,183	3.8	31,701	2,117	947	31.5	581	29.2	3,825	139	79.3
Chicago Great Western.....1943	907	4,629	5,536	.7	36,399	2,054	952	30.5	1,659	76.0	6,296	133	130.8
1942	1,381	3,907	5,288	1.2	34,278	1,923	813	29.3	1,489	80.4	5,415	138	127.6
Chi., Milw., St. P. & Pac.†.....1943	21,899	28,477	50,376	1.4	33,702	2,179	1,064	32.3	1,053	46.4	4,957	131	95.2
1942	28,698	24,164	52,862	1.3	32,032	2,062	984	33.7	930	42.8	4,501	134	96.6
Chi., St. P., Minneap. & Om.†.....1943	1,071	6,668	7,739	.7	25,293	1,793	844	31.8	757	34.0	3,726	118	68.8
1942	1,588	7,477	9,065	.6	23,284	1,698	786	32.2	663	31.6	3,604	120	68.7
Duluth, Missabe & I. R.....1943	15,051	396	15,447	2.6	37,944	2,464	1,399	44.4	112	4.5	3,168	97	30.8
1942	14,730	366	15,096	2.7	22,998	1,501	812	36.9	51	2.4	1,423	144	28.9
Great Northern.....1943	21,442	14,542	35,984	2.6	36,324	2,412	1,178	33.5	1,252	53.3	5,925	115	99.1
1942	26,444	4,262	30,706	1.9	34,868	2,356	1,136	32.6	951	41.1	5,237	116	85.3
Minneap., St. P. & S. St. M.†.....1943	5,743	7,549	13,292	2.8	31,129	1,781	873	33.6	1,054	46.2	3,235	107	119.1
1942	8,351	5,031	13,382	3.1	27,832	1,590	738	31.6	768	37.4	2,527	115	106.7
Northern Pacific.....1943	16,090	14,937	31,027	3.2	40,687	2,694	1,416	35.2	1,394	52.3	6,847	133	90.1
1942	21,328	12,931	34,259	3.3	37,024	2,485	1,273	34.9	1,1,				



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